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VOLUME I JULY, 1941 NUMBER 3

THE *demand for copies of the January issue of* THE AMERICAN NEPTUNE *has continued so steadily that the Editors have had made a photo-offset reprint of that issue, which is now being distributed to all subscribers who did not receive copies of the original edition. As this reprint has made back numbers available, the Editors will now return to their original policy of accepting subscriptions only for complete volumes, which coincide with the calendar year. In return for subscriptions received after the beginning of the year, subscribers will receive the numbers that have already appeared in the current volume, as well as the numbers that will be published during the remainder of the year.*

*Two changes in format are introduced in the present issue. This page of editorial comment is now presided over by a portrait of Father Neptune, drawn by Mr. Rudolph Ruzicka from a fragment of an American figurehead in the collection of Count Pehr Sparre. Collotype reproductions by the Meriden Gravure Company have been substituted for the half-tones which were used in the plates of the first two issues. The Editors feel that these collotypes are the most desirable type of reproduction for a journal of this nature, and they wish to thank Mr. Parker B. Allen, President of the Meriden Gravure Company, for the friendly co-operation which has made their use possible.*

*It is a particular pleasure to be able to announce in the News section of this issue the establishment of a marine museum in San Francisco, under the direction*

*of Mr. Edward Strong Clark, a member of the Editorial Advisory Board of* THE AMERICAN NEPTUNE. *Such an undertaking deserves support from the East as well as the West, for the maritime history of the United States cannot adequately be treated as a series of unrelated regional enterprises.*

*In this connection, the Editors are happy to print on pages 326-327 a letter from Count Sparre, calling for a comprehensive survey of both public and private marine collections throughout the United States. Such a plan has been constantly in mind, and in articles by Messrs. Taylor, Darter and Holdcamper certain types of marine materials in the United States National Museum and The National Archives have already been described. In these articles the writers have been concerned with the important marine possessions of institutions which are primarily concerned with wider fields of interest. A similar article describing certain of the resources of the New York Public Library is in preparation. This series will be followed by accounts of the museums which are solely or chiefly devoted to maritime history. It is hoped that a clear statement of the origins and purposes, the strength and the weakness of the collections of each, will help to bring about a better coordination of effort. The primary responsibility of any local museum is to perpetuate the history of its own region, but as New York ships went to New Orleans and San Francisco, and as Boston ships went to the Northwest Coast en route to China, there is much to be gained, even in the study of purely local history, from wide co-operation and interchange of information. Similarly the specialized collections of more general application would be benefitted by the joint efforts of all those active in the field. As the resources of private collectors often admirably supplement those of public institutions, the Editors gladly second Count Sparre's suggestion that such collectors place on file the fullest possible information regarding their interests, possessions and activities.*

# *Clifford Day Mallory*

## *1881 - 1941*

*BY CARL C. CUTLER*

IT is with deep regret that we record the death on the seventh of last April in St. Francis Hospital, Miami Beach, Florida, of Clifford Day Mallory. One of the most active, influential and universally respected figures in American shipping and yachting circles, his useful career was terminated at the age of fifty-nine by a relapse following a severe heart attack.

Clifford Mallory was a man of many and varied interests, among which the welfare of the American merchant marine ranked high. By experience and tradition derived in part from a long line of ship-owning and seafaring ancestry, perhaps no man of his generation had a clearer perception of the potential value of this neglected portion of America's heritage, or labored harder or with greater success to restore its prestige.

He was born in Brooklyn, New York, 26 May 1881, the son of Henry Rogers and Cora Pynchon Mallory. On his father's side, he was descended from Peter Mallory, who came to Boston from England in 1637, and on his mother's, from William Pynchon, who founded Springfield, Massachusetts. Aside from a comparatively brief venture of his great-great-grandfather, David Mallory, who was a privateersman during the American Revolution, the first member of the family to engage extensively in shipping pursuits was his great-grandfather, Charles Mallory, who settled in Mystic, Connecticut, in 1816. There he laid the foundation of a substantial fortune in the operation of whaleships, later engaging in the building and operation of clippers and wooden steamships.

His son, Charles H. Mallory, grandfather of Clifford, went to sea at an early age, rising to the command of vessels trading between New York and the Gulf ports. In 1866 he founded the house of C. H. Mallory & Company, and somewhat later the Mallory Steamship Line. His first steamships were built in the Mallory shipyard at Mystic. Henry R. Mallory, son of Charles H. and father of Clifford succeeded to the presidency of the line, and in 1900 Clifford began his career as a clerk in the office of

C. H. Mallory & Company. For a time prior to 1907 he was agent for the New York & Texas Company, and from 1907 to 1910 general agent and secretary of the Mallory Steamship Company. From 1910 to the early part of 1917 he was vice-president of both the Mallory and Clyde Steamship Companies.

During our participation in the World War he was assistant director of the United States Shipping Board Emergency Fleet Corporation. In this capacity he had charge of fitting out the first transport, the *Henry R. Mallory*, as well as the *Lenape* and *San Jacinto*, and was in general responsible for the direction of all the ships owned, chartered or requisitioned by the Government. Following the war, he formed in 1919 the corporation of C. D. Mallory & Company and began the operation of a large fleet of tankers and merchant steamships.

In addition to the presidency of C. D. Mallory & Company, he was a director of Seatrain Lines, Inc., Vamar Steamship Company, Inc., Waterways Operating Company, Inc., American Steamship Owners Mutual Protection and Indemnity Association, Hasler & Company, Inc., P. R. Mallory & Company, and the Putnam Trust Company. He was also president and director of the Mallory Transport Lines, Seminole Steamship Corporation, C. D. Mallory Brokerage, Inc., Ardmore Steamship Company, C. D. Mallory Corporation and the Farr Spinning & Operating Company, Inc.

Since 1919 he has been one of the outstanding figures in yachting, often sailing his own yachts in hard fought races. His yachts included the 40-foot *Mistral*, the 50-foot sloop *Mystic*, the *Iris*, the *Blackbeard*, and the 85-foot auxiliary ketch *Bonnie Dundee*. His racing yachts included the *Twilight*, in which he won the ten meter class in 1927, and the *Tycoon*, winner of the twelve meter class in 1929. Both these yachts were named for clipper ships built by his great-grandfather.

His clubs included the India Harbor Yacht Club, New York Yacht Club, the Seawanaka-Corinthian, Newport Harbor, California, Royal Nassau Sailing, the Cruising Club of America, and several social and country clubs — among them, India House, Whitehall and the Field and Round Hill Clubs of Greenwich, Connecticut, where he lived. He was president of the North American Yacht Racing Union (the ruling body of yacht racing in Canada and the United States), president of the Yacht Racing Association of Long Island Sound, and Commodore from time to time of several of the clubs mentioned. He was also a member of the Yacht Racing Association. These and other yachting connections involved long terms of service on important Rules Committees, during

which he played an important part in reformulating the rules for racing yachts on this side of the Atlantic. He was also chiefly responsible for the introduction of the twelve meter class in American waters.

In spite of great, and indeed excessive demands on his energies, resulting from these varied connections, he nevertheless found time to render extensive and useful service in a score of public, charitable and educational activities. He was a trustee of the American Merchant Marine Library Association, Sailors' Snug Harbor, Webb Institute of Naval Architecture, deputy chairman of the American Committee of Lloyd's Register of Shipping, life member of the American Red Cross, and a member of the Society of Naval Architects and Marine Engineers, the Boston Marine Society, the Peabody Museum Marine Associates, the Marine Museum of the City of New York, and kindred organizations.

Always deeply interested in youth, he gave generously of his time and resources in the promotion of boy scout and sea scout work. In 1939 he was awarded the Silver Beaver, the highest lay award for distinguished service to boyhood, and was the first to receive from the Greenwich, Connecticut, Scout Council, the Greenwich Achievement Award for outstanding local service.

Of all his varied activities, nothing is more indicative of his character than his long, devoted service as director and president of the Marine Historical Association, Inc., which in 1929 founded a small marine museum and research society in Mystic, Connecticut, the home of his ancestors for four generations. In spite of the modest nature of this venture and the fact that it obviously faced the prospect of years of exacting work under difficult conditions, it made a strong appeal to his sympathies for two reasons — his deep, abiding loyalty to family ties, and his profound interest in making the remarkable achievements of our seafaring ancestors a recognized part of a great American tradition. Because of these things he took a keen interest in the Association from the start — an interest which grew with the years until it became one of the things nearest his heart. As a founding member, he was elected to the first board of directors and served continuously until his death. During the past four years he served as president, and it is due in large measure to his dynamic and informed leadership devoted regardless of failing health, that both museum and membership expanded almost four-fold during his tenure. Some conception of the task this involved is afforded by the fact that in the last three years he wrote more than a thousand personal letters to friends and associates on matters concerning the museum. Few carry the business burdens that were his daily routine. That he assumed far more

in a selfless spirit of patriotic service, and gave to all he undertook an unwavering support regardless of difficult and often discouraging obstacles, was typical. To understand this is to appreciate something of the fine dependability that characterized a rarely precious personality.

He left surviving, his wife, Rebecca Sealy, formerly of Galveston, whom he married in 1911, two daughters, Margaret Pynchon and Barbara Sealy Mallory, a son, Clifford D. Mallory, Jr., a sister, Mrs. Frank C. Munson, and a brother, Philip R. Mallory.

Clifford Day Mallory will be long and greatly missed in business and yachting circles, but it is the memory of the man himself — his unfailing, kindly considerateness, his ready, generously bestowed sympathy expressed in countless unreported deeds, his rich, warm, outgoing friendliness — that will be longest and most lovingly cherished. Truly, he was a friend to all, and gave his life for his friends.

# *The Ocean Navigation of Columbus on his First Voyage*

*BY LIEUTENANT JOHN W. McELROY, U.S.N.R.*
*Chief Navigating Officer of the Harvard Columbus Expedition*

THE problem of Columbus's navigation on his First Voyage has received the attention of many writers, and been the subject of much controversy; but as yet nobody has beeen able to reconcile the known departures and landfalls with the dead-reckoning courses and distances which are recorded in Las Casas's Abstract of the Journal of the First Voyage. Authoritative opinion is now unanimous that San Salvador Island was the first land sighted by the fleet in the New World, and that Samaná Bay in Hispaniola was the point whence *Niña* and *Pinta* took their departure for the homeward-bound passage; whilst on the eastern side of the ocean, Columbus himself identified Gomera in the Canaries and Santa Maria in the Azores as his respective points of departure and of landfall. Yet the discrepancies between the actual navigable distances and those logged by Columbus[1] are so great as to indicate that any attempt to plot the tracks of either the outward- or homeward-bound passage would be hopeless; and few have tried.[2] Those that have, were forced to fudge Columbus's reckoning, change his courses, or in some way play fast and loose with the record in order to have the fleet arrive at San Salvador instead of somewhere in the Gulf of Mexico, or at Santa Maria on the homeward passage instead of somewhere in the mountains of Spain.

Nevertheless it is a fact that on the basis of the dead-reckoning computations kept during the first and other voyages, Columbus was able on a subsequent voyage to steer for any place or port he wished to make in the Indies or Spain and 'hit it on the nose.' This has always been one of the mysteries connected with the Admiral. It seemed to me that the way to solve this mystery was to search for some factors or constants involved that would pull everything together. Those for the First Voyage, for instance,

[1] I refer of course to his private log, the one recorded in the Journal, not the 'phony' one that he cooked up to deceive the pilots and seamen both out and home.

[2] See discussion in G. E. Nunn, *Geographical Conceptions of Columbus* (New York, 1924). On pp. 34-36 Mr. Nunn gives a bibliography of previous charts and reconstructions of Columbus's First Voyage, and no others are known to the present writer to have been attempted since.

if found and applied to the record in the Journal, might reveal his secret as a dead-reckoning navigator, and even enable modern navigators to reconstruct and follow Columbus's First Voyage across the ocean.

Before attempting to find these factors or constants, I shall briefly sketch some of the elements to be taken into consideration in a study of the navigation of the First Voyage. Before calculating and plotting each 'day's work' something should be said of methods used in the Admiral's era for determining speed, time, distance, courses and other matters.

The Journal of the First Voyage that we now have is not the original, which went to the Queen at Barcelona, and has long since disappeared,[3] but an abstract made by Bartolomé de Las Casas of a copy of the original, which has also disappeared. The manuscript of Las Casas's abstract is preserved in the Biblioteca Nacional, Madrid, and a complete photostat copy of it, together with the best printed text (that in the *Raccolta Columbiana* edited by Cesare de Lollis and published by the Italian government in 1892) has been in my hands throughout this study, to check courses and distances. Quite a number of errors were made by the scribe who copied the original Journal. Others were doubtless made by Las Casas in abstracting it. Many more, however, were made by Fernández de Navarrete when printing the Abstract Journal in his *Colección de los Viages y Descubrimientos* in 1825; and the English translators, through ignorance of how Spaniards boxed the compass, raised the devil with Columbus's courses.[4] That is one reason why earlier attempts to reconstruct the First Voyage never came out. I have used the fresh translation made by Professor Morison in collaboration with Professor Jeremiah D. M. Ford;[5] but every doubtful point has been checked back to the almost impeccable De Lollis text in the *Raccolta*, and to the photostat of the Las Casas manuscript.

Despite the errors made by the original copyist and by Las Casas, and the probable deletion of navigational data that Las Casas considered unessential, Columbus's Journal of his First Voyage is one of the best as well as the earliest records of any important voyage of discovery. Stay-at-home navigators like Vignaud and Carbia, and others whose crackpot theories of Columbus are disproved by the Journal, naturally declare it to be garbled, fixed up, and faked. I can testify that it is a remarkably honest and straightforward nautical record, which shows no evidence

[3] Alice B. Gould, in *Boletín de la Real Academia de Historia*, LXXXVIII, 761-62.

[4] S. E. Morison, 'Texts and Translations of Columbus's Journal of the First Voyage,' *Hispanic American Historical Review*, XIX (1939), 235-61.

[5] This will be published within a year or two in a volume of Columbian Sources and Documents now being prepared by Professor Morison.

whatever of having been tampered with or even revised. It records a great many errors of Columbus that he afterwards knew to be errors, and which could easily have been expunged or fixed up before the end of the voyage had he wanted to show himself impeccable. Las Casas interpolated a few remarks of his own, but there are so few of these on the outward and homeward passages that they are easy to detect.

Columbus and his pilots, like other seamen of their time, could only estimate the speed of their vessels at sea by observing a floating object passing them, or by estimating the apparent speed of the water rushing by the ship's side. Had any physical method of determination been used, such as a chip or patent log, it would have been more difficult for Columbus to have deceived and confused his pilots as to the distance covered. The fact that the Admiral had been a chart-maker quite likely gave weight to his opinion among the pilots; or perhaps aboard *Santa Maria* and *Niña,* just as on small craft of today when estimates differ as to speed, the usual compromise was the commanding officer's guess! Columbus's overestimates of speed and distance made on the homeward passage in the smaller *Niña* were over 50% higher than they had been on the outward passage aboard *Santa Maria*. The reason for this will be considered later.

Having estimated the speed, the pilot on deck made a periodic check of the progress of the vessel, by noting on a board or slate any variation in speed during the watch. Time was kept and watches were limited by *ampolletas* or 'glasses.' The sand in the glass, if kept level (which it seldom could be), ran out in exactly half an hour, and it was the business of a *grumete* or ship's boy in each watch to turn the glass as soon as the sand ran out, and to make a stroke on the board or slate when he did so. Columbus was well aware, as his efforts to ascertain longitude by timing eclipses in 1494 and 1502 prove, that when sailing westward his day from noon to noon was more than twenty-four hours, and the converse. He must therefore have used some method to 'set' the *ampolleta* every few days. This may have been done from the excellent time-clock that Polaris affords, and which was common knowledge among mariners of the day.[6] But it was more probably done by a rough azimuth of the sun, taken on a relatively calm day. Columbus would turn the glass at noon, when the shadow of a pin or gnomon set up on the binnacle touched due north on the compass card.[7]

Careful study of the Journal of the First Voyage shows that the day aboard ship on the outward passage was reckoned from sunrise to sunrise;

[6] See S. E. Morison, 'Columbus and Polaris,' THE AMERICAN NEPTUNE, I (1941), 6-25, 123-137.

[7] Captain A. Fontoura da Costa shows in his *A Marinharia dos Discobrimentos* that this method was used by Portuguese navigators in Columbus's day.

whilst the log entries on the return passage cover courses and distances sailed for the twenty-four hours beginning and ending at sunset. It may have been customary at that time to make such a change in writing up the log when the course was set for home. At any rate, thirty-one out of the thirty-three days of the outward passage include in the current day all events which occur between sunrise that day and sunrise the next. The two exceptions are the first and last days of actual sailing. The Journal for Saturday 8 September 1492 begins, 'At the third hour of the night [3 A.M.] Saturday the NE wind began to blow.' This exception is explained by the fact that the fleet lay becalmed from sunrise Friday 7 September, and made a very poor run on Saturday 8 September. During the twenty-six hours and forty minutes from 3 A.M. Saturday 8 September until sunrise Sunday 9 September a total of nine leagues was logged, at a speed of less than one knot. The distance covered between 3 A.M. and sunrise Saturday was therefore less than a league, obviously too small a run to be entered separately under Friday 7 September. The second exception is at the end of the outward passage. Columbus was evidently so excited over the landfall that he ran the events of 12 October right along after those of 11 October without making a new heading.

The eastward and westward sailing tracks selected by Columbus were in my opinion not based upon scientific observation or secret knowledge, but were a combination of good fortune, better judgment, and the best traditions of navigation. Just like dead-reckoning shipmasters down to the present century, the Admiral sought the parallel of latitude upon which his destination was presumably located and steered along that line until he reached his objective. Columbus made a fine job of sticking to the twenty-eighth parallel after leaving Gomera on the outward passage. Martin Alonso Pinzón (backed up by the birds) persuaded him to change the course of the fleet to the southwestward only toward the latter end of the passage.

It was an accident of geography in favor of the Admiral that the parallel of Gomera lay mostly within the upper edge of the NE tradewind belt, so that on all but a few days the trades carried his fleet along steadily and safely on the west-bound passage. No scientific knowledge accomplished this, but plain good luck.

Good judgment decreed that the fleet take on as much wood, water and stores as possible before starting on a voyage of indefinite length. The island of Ferro, a little further west, had no harbor, and water could be obtained only from a 'marvellous tree.' So Gomera was the logical hopping-off place for the expedition. Of the homeward-bound passage, more anon.

When Columbus says in the Journal that the fleet steered 'west' one assumes that the course so set was as well followed as human helmsmen could. Even the most stupid of his reluctant recruits could understand that exact courses must be steered if the fleet was to find its way back from this perilous voyage across unknown seas; and there can have been little falling off to either side of that point on the compass. The fact that Columbus made a lengthy entry in the Journal when he found that the man at the helm had allowed *Santa Maria* to run up one or two points, also indicates how closely the Admiral and his pilots guarded the steering. As a matter of fact setting magnetic courses and steering by compass points rather than degrees is by no means conducive to careless steering, as many assume today whose only experience is with steam. In a steady breeze the helmsman soon gets the feel of a sailing vessel, and in weather such as Columbus experienced on his First Voyage the helmsman can keep her steady easier than can the man at the wheel of a steamship.

There being no great amount of metal aboard to cause any deviation in the needle's direction, the compasses aboard these wooden caravels permitted, it may be assumed, excellent magnetic courses to be steered. But with the compass cards then in use, graduated only to full points, it may seem a bit absurd to attempt to convert the Admiral's compass courses into their modern equivalents in degrees; and it may seem even more ridiculous to apply variations as small as half degrees to Columbus's compass courses, since no allowance whatsoever is being made in this paper for changes in courses due to leeway or set of the current. But the Journal indicates that strong breezes from a quarter which might have created noticeable leeway were conspicuously absent during his westbound passage; whilst modern pilot charts for the months of September and October indicate that the current encountered in the waters traversed by the fleet is negligible. Thus leeway and set may practically be disregarded and only the magnetic (agonic) variation considered as a factor that should be applied to *Santa Maria's* compass courses to obtain true courses.

The phenomenon of magnetic variation was observed but misunderstood and misinterpreted by Columbus, who incidentally was one of the first to notice the effect of variation on ships' compasses. The behavior of the North Star elicited some wise and much unwise comment from the Admiral,[8] but because the change from easterly to westerly variation was otherwise unnoticeable (except by the change in the star's position)

[8] See S. E. Morison's article 'Columbus and Polaris,' in THE AMERICAN NEPTUNE, I (1941), 6-25, 123-137.

no allowance was made in the courses steered to counteract the increasing westerly variation on the outward passage.

On the basis of the data and information to be found on the attached chart showing the isoagonic lines of magnetic variation for the year 1500,[9] it has been possible to determine and apply the proper variation to the courses recorded in the Journal. It will be observed that the outward-bound passage traversed regions of variation from 2° easterly near the Canaries up to a maximum of 7° westerly variation about the middle of the voyage, and then through a region of decreasing westerly to a place of approximately zero variation near the Bahamas.

Many have been misled by misunderstanding Columbus's unit of distance. He used in his calculations the *milla*, the Italian or Roman mile, four of which made his *legua* or league. His *milla* or Roman mile was 4,842 feet long; and his league therefore measures 3.18 nautical miles. That factor is the one here used to convert Columbus's leagues into nautical miles of 6,080 feet each.

Columbus unwittingly overestimated what he believed to be the true daily runs and total distances sailed on the outward passage of the First Voyage. And since he was especially careful and consistent in his navigational data, the percentage of exaggeration was probably consistent. Hence if it were possible to discover the exact ratio of actual distance sailed to the estimate made by Columbus on this outward passage of the First Voyage, it would only be necessary to apply this factor to solve the problem of the true daily and total runs.

In his 'Note on the Navigation of Columbus's First Voyage,'[10] Lord Dunraven somewhat arbitrarily and casually gets rid of the excess distance as follows:

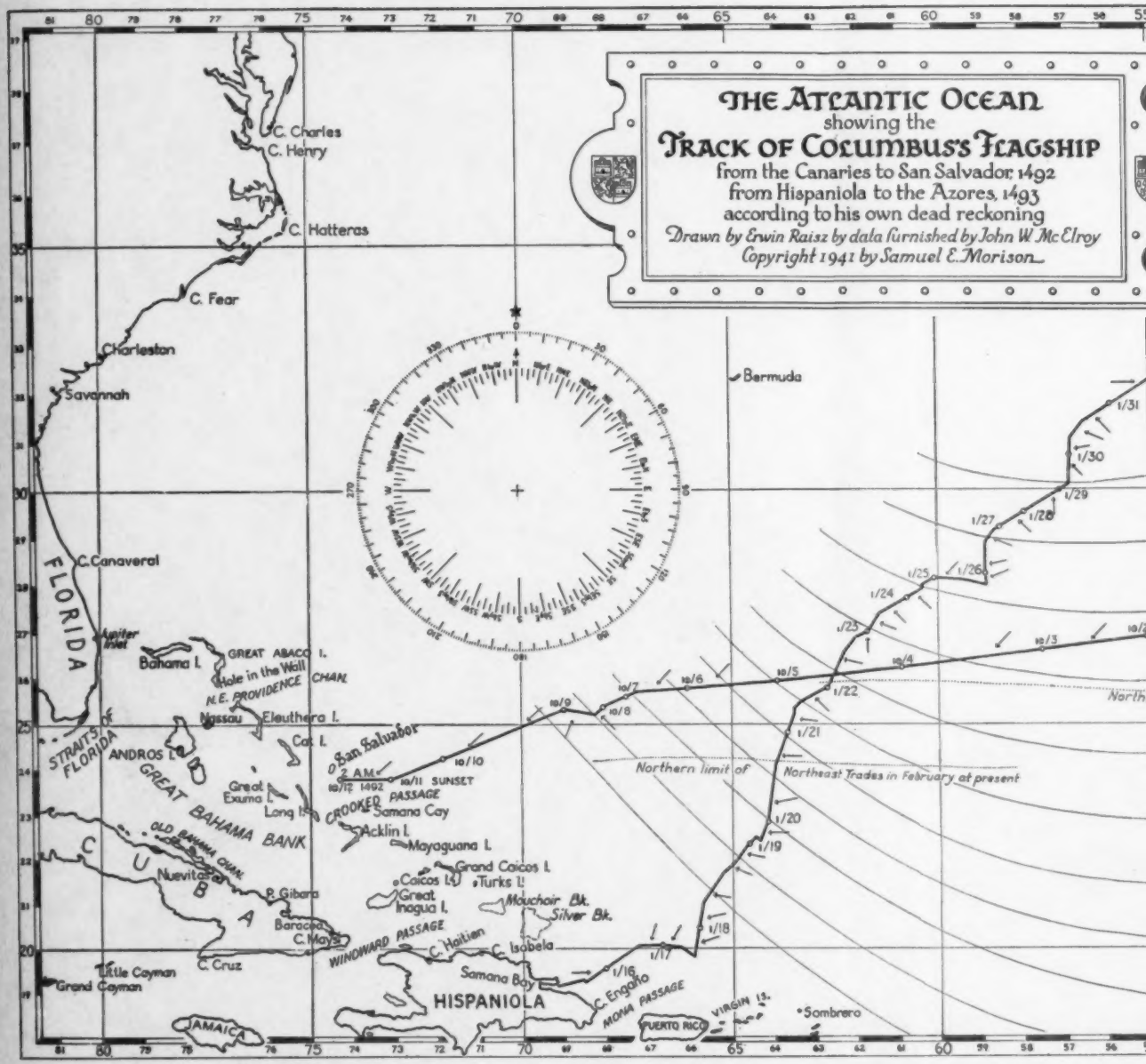
> Columbus's league contained four Italian miles and was equal to 3.18 of our nautical miles. Considering the unreliable character of all the data, whether by observation or by dead-reckoning, the fractions may, I think be omitted, though they make a difference of some 200 miles in the total run from Gomera to Watling Island.[11]

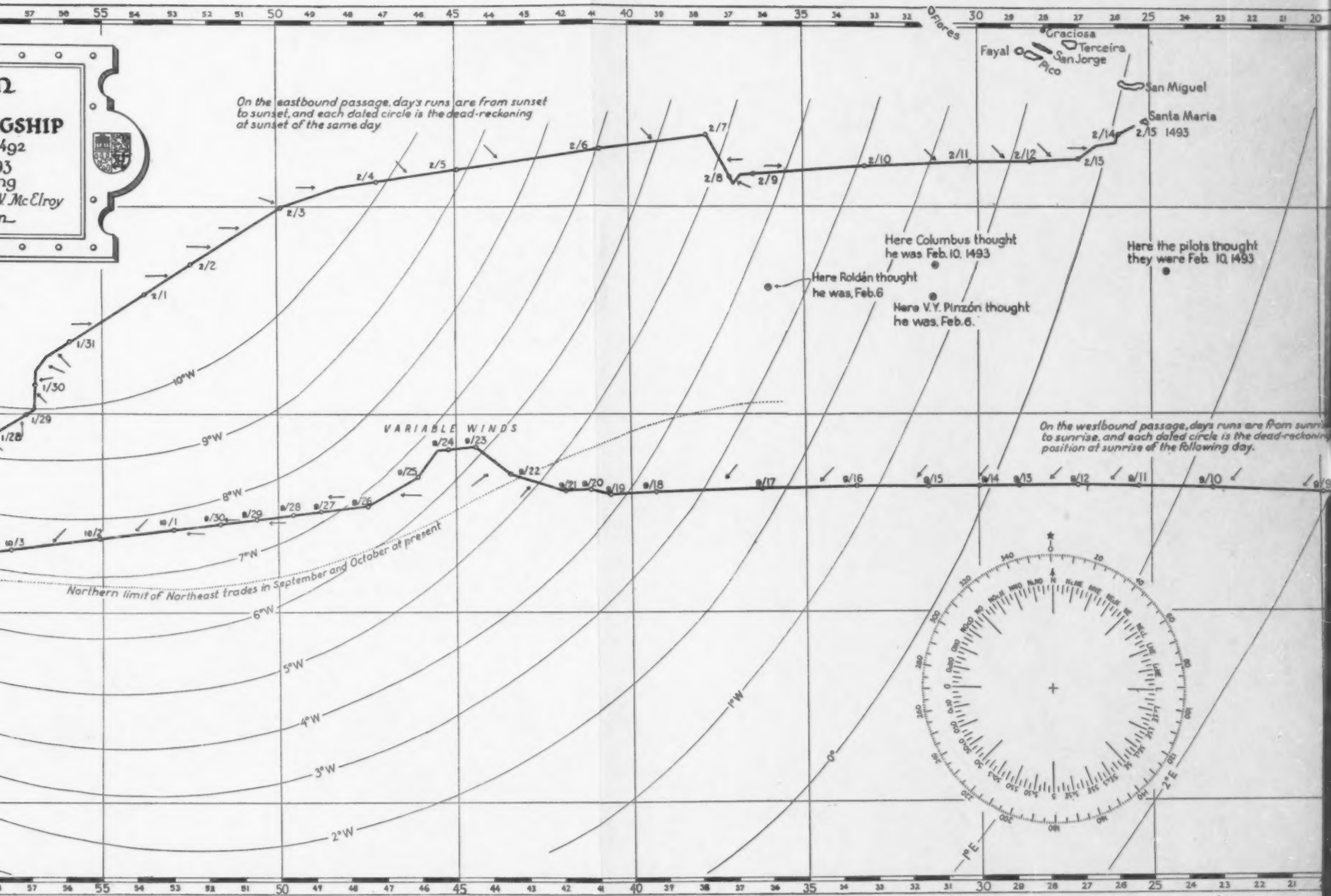
In other words, where Columbus reckoned that his fleet had proceeded 318 miles, Lord Dunraven's figure would be 300, a deduction of 5.66% from Columbus's estimates.

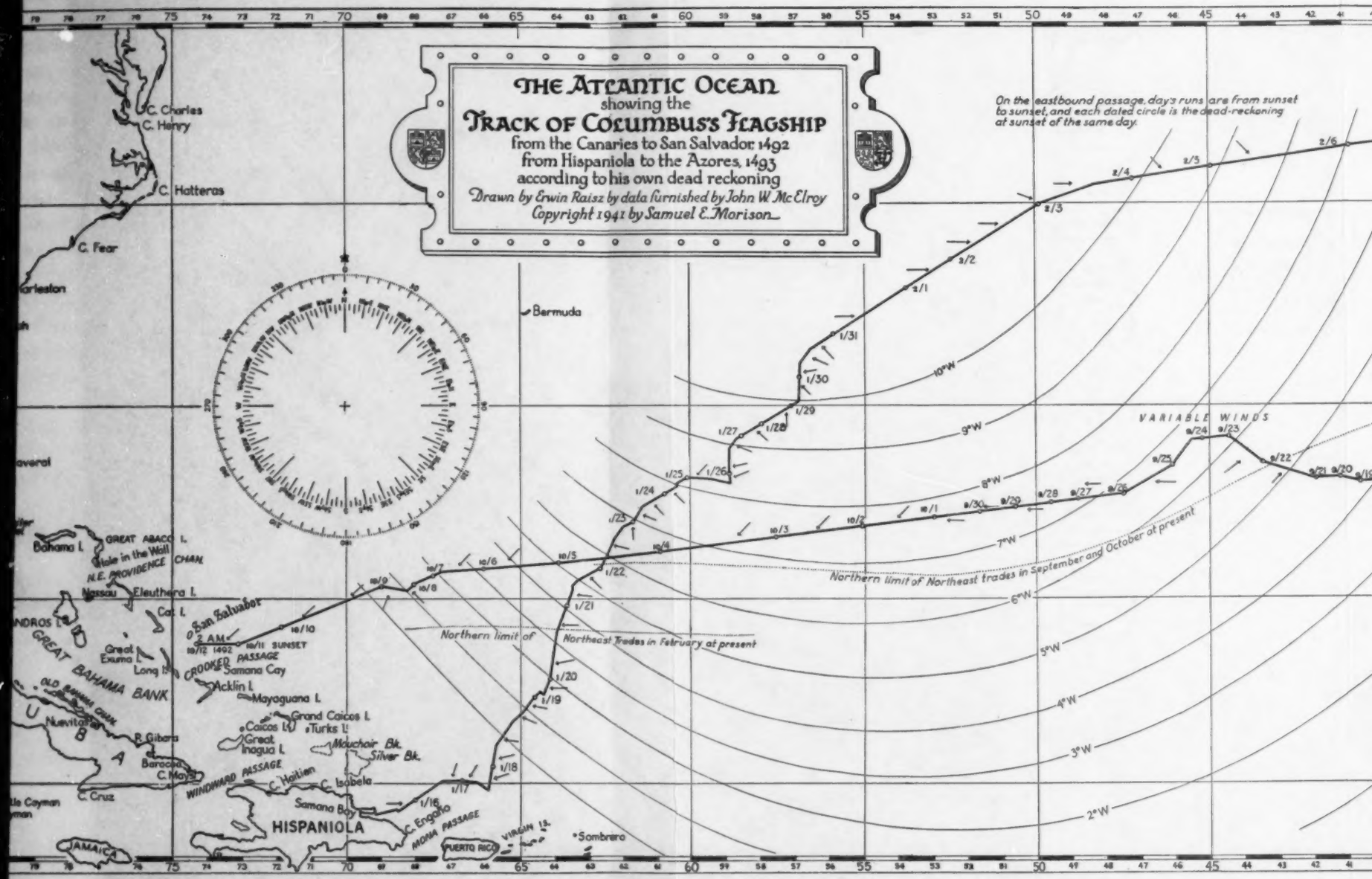
[9] These were obtained from 'Isogonen-Karten für die Epochen 1500, etc.,' Appendix to W. Van Bemmelen, 'Die Abweichung der Magnetnadel,' in Supplement to *Observations* of the Royal Magnetical and Meteorological Observatory at Batavia, XXI (Batavia, 1899).

[10] Printed as an appendix to Filson Young, *Christopher Columbus and the New World of his Discovery* (3d ed., London, 1911), pp. 399-422.

[11] Id., p. 412. Watling Island is the same as San Salvador. Its official name is now 'San Salvador or Watlings Island.'


THE ATLANTIC OCEAN
showing the
TRACK OF COLUMBUS'S FLAGSHIP
from the Canaries to San Salvador, 1492
from Hispaniola to the Azores, 1493
according to his own dead reckoning
Drawn by Erwin Raisz by data furnished by John W. McElroy
Copyright 1941 by Samuel E. Morison
C. Charles
C. Henry
C. Hatteras
C. Fear
Charleston
Savannah
C. Canaveral
FLORIDA
STRAITS OF FLORIDA
Jupiter Inlet
Bahama I.
GREAT ABACO I.
Hole in the Wall
N.E. PROVIDENCE CHAN.
Nassau
Eleuthera I.
Cat I.
ANDROS I.
GREAT BAHAMA BANK
Great Exuma I.
Long I.
CROOKER PASSAGE
Samana Cay
Acklin I.
OLD BAHAMA CHAN.
Nuevitas
C U B A
P. Gibara
Baracoa
C. Maysi
Mayaguana I.
Grand Caicos I.
Caicos Is.
Turks Is.
Great Inagua I.
Mouchoir Bk.
Silver Bk.
WINDWARD PASSAGE
C. Haitien
C. Isabela
Samana Bay
C. Engaño
MONA PASSAGE
HISPANIOLA
PUERTO RICO
VIRGIN Is.
Sombrero
C. Cruz
Little Cayman
Grand Cayman
JAMAICA
Bermuda
San Salvador
2 AM 10/11 SUNSET
10/12 1492
10/10
10/9
10/8
10/7
10/6
10/5
10/4
10/3
1/22
1/21
1/20
1/19
1/18
1/17
1/16
1/25
1/26
1/27
1/28
1/29
1/30
1/31
Northern limit of Northeast Trades in February at present
North


Graciosa
Terceira
Fayal
San Jorge
Pico
San Miguel
Santa Maria
2/15 1493
Here Columbus thought he was Feb. 10, 1493
Here the pilots thought they were Feb. 10, 1493
Here Roldán thought he was, Feb.6
Here V.Y. Pinzón thought he was, Feb.6.
On the eastbound passage, day's runs are from sunset to sunset, and each dated circle is the dead-reckoning at sunset of the same day
On the westbound passage, days runs are from sunrise to sunrise, and each dated circle is the dead-reckoning position at sunrise of the following day.
VARIABLE WINDS
Northern limit of Northeast trades in September and October at present
10°W
9°W
8°W
7°W
6°W
5°W
4°W
3°W
2°W
1°W
0°
1°E
2°E


THE ATLANTIC OCEAN
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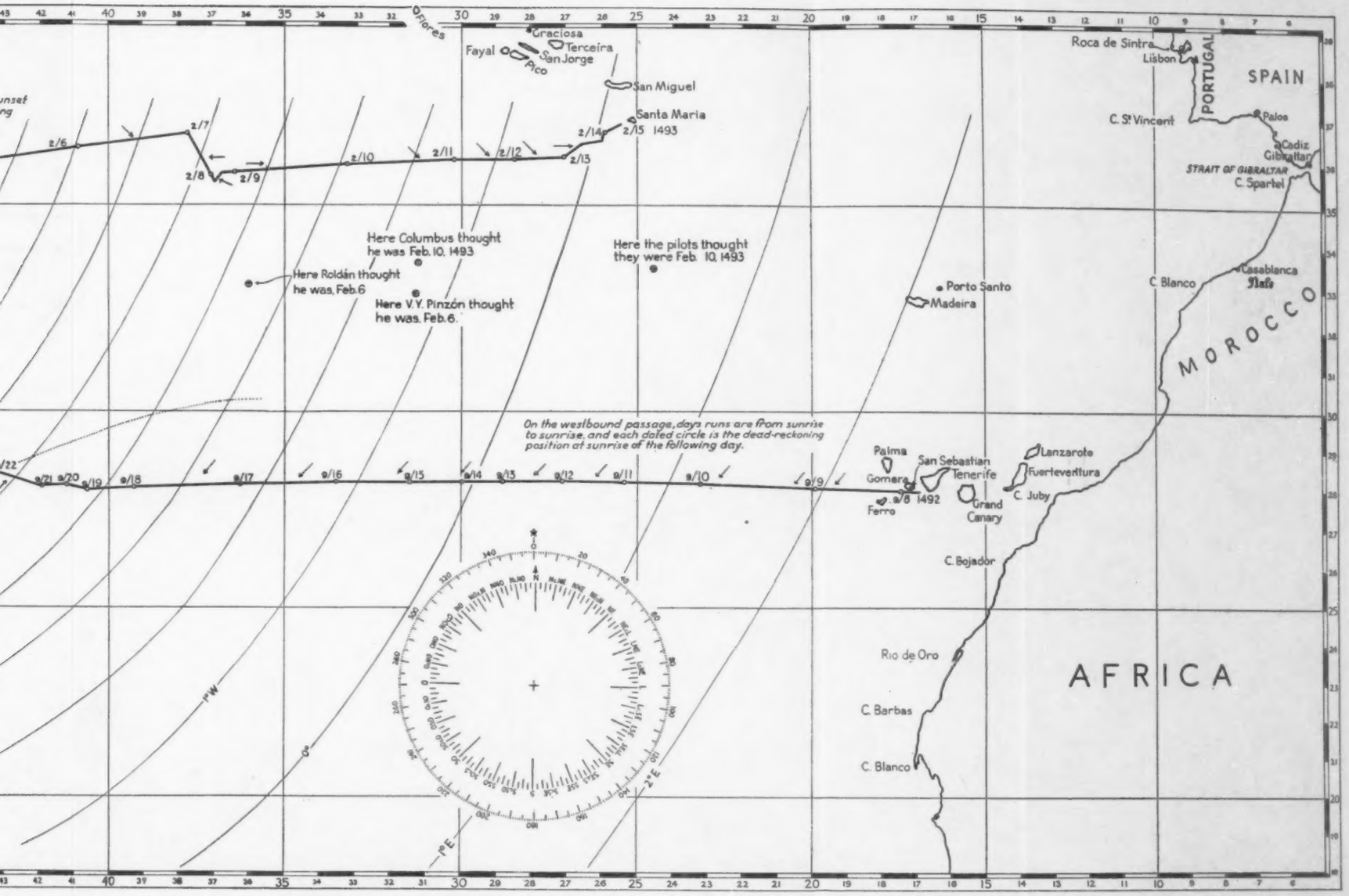
On the eastbound passage, day's runs are from sunset to sunset, and each dated circle is the dead-reckoning at sunset of the same day.
Bermuda
C. Charles
C. Henry
C. Hatteras
C. Fear
Charleston
Bahama I.
GREAT ABACO I.
Hole in the Wall
N.E. PROVIDENCE CHAN.
Nassau
Eleuthera I.
Cat I.
San Salvador
2 AM 10/12 1492
10/11 SUNSET
10/10
CROOKED PASSAGE
Great Exuma I.
Long I.
Samana Cay
Acklin I.
Mayaguana I.
GREAT BAHAMA BANK
OLD BAHAMA CHAN.
Nuevitas
Grand Caicos I.
Caicos Is.
Turks I.
Great Inagua I.
Mouchoir Bk.
Silver Bk.
R. Gibara
Baracoa
C. Maisi
WINDWARD PASSAGE
C. Haitien
C. Isabela
C. Cruz
Samana Bay
C. Engaño
MONA PASSAGE
HISPANIOLA
JAMAICA
PUERTO RICO
VIRGIN Is.
Sombrero
Northern limit of Northeast Trades in February at present
Northern limit of Northeast trades in September and October at present
VARIABLE WINDS
10°W
9°W
8°W
7°W
6°W
5°W
4°W
3°W
2°W


Flores
Graciosa
Terceira
Fayal
San Jorge
Pico
San Miguel
Santa Maria
2/15 1493
2/6
2/7
2/8
2/9
2/10
2/11
2/12
2/13
2/14
Here Columbus thought he was Feb. 10, 1493
Here Roldán thought he was, Feb. 6
Here V.Y. Pinzón thought he was, Feb. 6.
Here the pilots thought they were Feb. 10, 1493
Porto Santo
Madeira
On the westbound passage, days runs are from sunrise to sunrise, and each dated circle is the dead-reckoning position at sunrise of the following day.
9/22
9/21
9/20
9/19
9/18
9/17
9/16
9/15
9/14
9/13
9/12
9/11
9/10
9/9
9/8 1492
Palma
Gomera
San Sebastian
Tenerife
Ferro
Grand Canary
Lanzarote
Fuerteventura
C. Juby
C. Bojador
Rio de Oro
C. Barbas
C. Blanco
AFRICA
Roca de Sintra
Lisbon
PORTUGAL
SPAIN
C. St Vincent
Palos
Cadiz
Gibraltar
STRAIT OF GIBRALTAR
C. Spartel
C. Blanco
Casablanca
Mafe
MOROCCO
NW
NE
2°E

In the light of what Lord Dunraven had done so haphazardly, it seemed that there might be more scientific estimates made of the overrun, and in considering the problem the following solution suggested itself. Why not subtract from Columbus's total estimate of distance sailed between Gomera and San Salvador, the corrected distance computed by Mercator sailing (allowing a reasonable excess over the shortest navigable distance to compensate for courses which deviated from the 'true' course) and then determine more accurately the percentage of overestimate than was done by Lord Dunraven's arbitrary dropping the fraction from the miles per league? Applying the result (the percentage factor) to each day's run according to the Journal, one might find the 'true' distance in very much the same way as variation is applied to compass courses in order to find true courses. Thus both true courses and true distances for each day's work might be computed .

The Journal of the First Voyage records a total of 1,090 leagues sailed by the fleet between Gomera and the point where the landfall was made at the end of the westbound passage. Taking 3.18 nautical miles per league, Columbus therefore estimated that he had sailed 3,466 nautical miles.

Assuming as indicated in the following pages that his point of departure was a position 8 miles SE of San Sebastian roads, Gomera, and that his point of destination was the latitude and longitude of a position 2 leagues due east of the center of the east coast of San Salvador, the problem by Mercator sailing presents itself as follows:

| | | | | *Lat.* | *Long.* |
|---|---|---|---|---|---|
| Departure: | 8 miles SE Gomera harbor | | | 28° 00′ N | 17° 00′ W |
| Destination: | 6 miles E of San Salvador Island | | | 24° 00′ N | 74° 20′ W |
| Lat. A. | 28° 00′ N | meridional parts | 1740.2 | Long. A. | 17° 00′ |
| Lat. B. | 24° 00′ N | meridional parts | 1474.5 | Long. B. | 74° 20′ |
| | 4° 00′ | | 265.7 | | 57° 20′ |

diff. lat. 240′ — diff. long. 3440′

| | | |
|---|---|---|
| log of diff. long. 3440′ | 13.53656 | |
| log of diff. mer. parts 265.7 | 2.42439 | |
| | 11.11217 | equals tangent of course S 85° 35′ W |
| sec. of course 85° 35′ | 11.11346 | |
| log of diff. latitude | 38021 | |
| | 49367 | equals log of distance, or 3,116 miles. |

The amount to allow for the 'reasonable excess' over 3,116 miles (the shortest distance by Mercator) must necessarily be a close estimate based

on the number of times that courses actually sailed diverged from the true course found above. One per cent or just under a mile per day will first be tried; although at first glance it might be thought that this figure is hardly enough allowance.

| | *Nautical Miles* |
|---|---|
| Distance by Mercator from point of departure to position of landfall | 3116 |
| 'Reasonable excess' (1%) | 31.16 |
| Distance from Gomera harbor to point of departure | 8 |
| Distance actually sailed | 3155 |
| Distance estimated by Columbus | 3466 |
| Overrun | 311 |

The total overrun of 311 miles divided by the larger figure, 3,466, gives a factor of 9%. This is the percentage of overestimate which should be applied to each day's run recorded by Columbus in the Journal. Or, what is the same thing, 91% of each day's run recorded in the Journal has been computed and is used in performing the simple navigational problem of the 'day's work' in the following pages. In other words, the league that Columbus actually used measured 2.89 nautical miles, whilst the league that he thought he was using measures 3.18 nautical miles.[12]

In these abstracts I have quoted or summarized only those parts of each day's log that are relevant to our problem, omitting all observations of birds and fishes, false landfalls, 'beefing' by the seamen, and the like. The positions given in the last two columns in latitude N of the equator and longitude W of Greenwich are, it should be understood, for the *end* of the 'day's work,' which came at sunrise the *following* day. And so also on the chart. Thus, the position of lat. 28° 05.7′ N, 19° 56′ W for Sunday 9 September is the computed position for sunrise on Monday 10 September. Any endeavor to establish a 'noon position' for every day would involve guesswork and be of no aid in solving our problem of laying down the actual course followed by *Santa Maria*, *Pinta* and *Niña* on their epoch-making passage.

It will be noted that my method of computing this voyage brings the fleet to a position of lat. 23° 47.4′ N, long. 74° 29′ W, about 9 miles S of San Salvador, at the time of the landfall, 2 A.M. 12 October 1492. But the data in the Journal and the *pleitos* on the landfall, especially Columbus's decision to heave to as soon as he sighted land, prove to my satisfaction

[12] Professor Morison informs me that he has found an overrun of 9 or 10% in Columbus's distances between two points that can be accurately measured: crossing Crooked Island Passage from Fortune Island to the Nurse Cays, and crossing the Windward Passage from Cape Maisi, Cuba, to Cape St. Nicolas Môle, Haiti.

that San Salvador was sighted somewhat south of its centre, dead ahead, and about 6 miles distant, from a position about lat. 24° N, long. 74° 20′ W. In other words, the actual landfall was made from a position about 15 miles NE by N of the computed landfall. Anyone making a transatlantic voyage today in a sailing vessel, with a patent log to measure his distance, but without a single celestial observation to correct his dead-reckoning, would consider himself very lucky to come as close as that. Even on short runs in sailing yachts, such as from Pollock Rip to Halifax, a discrepancy of 20 miles between the dead-reckoning position and landfall is nothing unusual. This study, therefore, proves that Columbus kept his dead-reckoning with uncommon care; and that within the framework of his knowledge and the very slight development of celestial observations in 1492, he was a really great navigator.

In the original manuscript of the Journal, the usual verbs used to express motion are *navegó*, translated 'he sailed'; *anduvó*, translated 'he went,' 'made,' or 'proceeded'; and *andaría*, 'he would have made,' or 'made about.' This use of the conditional does not I think mean any greater doubt of the speed or distance mentioned than the use of the indicative; it simply shows that Columbus realizes it was a mere estimate. Thus, one often hears seamen of today say, 'From —— to —— it would have been sixty miles, and we had a fair wind.' Certainly there is no reason to give a different value or credence to the *anduvó* distances than to the *andaría*.

In the quoted parts of the Journal I have included all relevant data, without indicating omissions. Statements of speed, for purposes of quotation, have generally been reduced to knots by applying the factor 75 to Columbus's Roman miles per hour, but the accurate factor of .795 was used in my calculations. Columbus generally gives the distances both in Roman miles and leagues at 4 Roman miles to the league. When he says 'and more,' as on 11, 15 and 17 September, I assume that he means a fraction of a league more, and have disregarded the fraction which I have no means of guessing.

In the distance columns of the table, the 'leagues' are Columbus's leagues, the 'miles' are modern nautical miles, arrived at by applying the factor 3.18 to the leagues; the third is the net mileage, 91% of the second column. The position in latitude N and longitude W, given at the foot of the Difference Latitude and Difference Longitude columns, is the position worked out for sunrise the *following* day, when each day's work ends. Wind directions are bracketed when inferred from other data and not mentioned in the Journal.

*Thursday, 6 September*

'Departed this day in the forenoon from the harbor of Gomera and took the course to make his voyage, and proceeded all that day and night in a calm, and at morning found himself between Gomera and Tenerife.'

Position of anchorage off San Sebastian on the island of Gomera: lat. 28° 06′ N, long. 17° 06′ W.

*Friday, 7 September*

'All Friday and Saturday up to 3 A.M. he lay becalmed.'

Assuming that Columbus cleared San Sebastian roads, Gomera, about 11 A.M. Thursday, his fleet was becalmed for 40 hours before catching a breeze at 3 A.M. Saturday. Between the two islands, the fleet would have experienced the usual 0.2 knots set in the trend of the channel (NW by N to SE by S), and drifted about 8 miles to the S and E. The actual point of departure in this paper, therefore, is reckoned as in the table opposite:

*Saturday, 8 September*

'At 3 A.M. Saturday the NE wind began to blow and he made his way and course to the W. Made that day together with the night about 9 leagues.'

As I have explained, this day's journal by exception includes the short run made between 3 A.M. and sunrise.

*Sunday, 9 September*

'Made that day 15 leagues. In the night 30 leagues,' at 7½ knots. 'Seamen steered badly, letting her run up to W by N and even WNW, for which the Admiral scolded them.'

*Monday, 10 September*

'On that day with its night proceeded 60 leagues,' at 7½ knots.

*Tuesday, 11 September*

'Sailed on his course W, made 20 leagues and more. That night made 20 leagues.'

*Wednesday, 12 September*

'That day, following his course, proceeded night and day 33 leagues.'

*Thursday, 13 September*

'That day and night, following his course W, proceeded 33 leagues.'

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 91% | | ° ′ | ° ′ | Lat. N & Long. W |
| 7 | | | | 67°.5 | | | 8 | 5.7 | 5′.7 | 6′.5 | 28°00′.3 N<br>16°59′.5W |
| 8 | NE | W | 2° E | 272° | 9 | 28.6 | 26 | 26 | 0′.9 | 29′.5 | 28°01′.2 N<br>17°29′ W |
| 9 | NE | W | 2° E | 272° | 45 | 143.1 | 130 | 129.9 | 4′.5 | 2°27′ | 28°05′.7 N<br>19°56′ W |
| 10 | NE | W | 2° E | 272° | 60 | 190.8 | 173.6 | 173.5 | 6′ | 3°16′.5 | 28°11′.7 N<br>23°12′.5W |
| 11 | [NE] | W | 1° E | 271° | 40 | 127.2 | 115.8 | 115.8 | 2′ | 2°11′ | 28°13′.7 N<br>25°23′.5W |
| 12 | [NE] | W | 1° E | 271° | 33 | 104.9 | 95.5 | 95.5 | 1′.7 | 1°48′ | 28°15′.4 N<br>27°11′.5W |
| 13 | [NE] | W | 0 | 270° | 33 | 104.9 | 95.5 | 95.5 | 0 | 1°48′ | 28°15′.4 N<br>28°59′.5W |

*Friday, 14 September*

'Sailed that day and night W 20 leagues.'

*Saturday, 15 September*

'Sailed that day and night 27 leagues W, and somewhat more.'

*Sunday, 16 September*

'Sailed that day and night W 39 leagues.'

*Monday, 17 September*

'Sailed W day and night 50 leagues and more.'

*Tuesday, 18 September*

'Sailed that day and night more than 55 leagues.'

*Wednesday, 19 September*

'Sailed his course, and between day and night made 25 leagues.'

*Thursday, 20 September*

'Sailed W by N and WNW, winds very variable, calm. Made about 7 or 8 leagues.' I take WNW, 7 leagues.

*Friday, 21 September*

'That day calm, later some wind. Made good between day and night, of what was on the course and what was not, about 13 leagues.'

*Saturday, 22 September*

'Sailed WNW more or less, yawing to one hand or the other, 30 leagues. Contrary wind.'

*Sunday, 23 September*

'Sailed NW and sometimes NW by N and sometimes on his course which was W; and made about 22 leagues.' I used NW, approximately the mean of the day's courses.

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 91% | | ° ′ | ° ′ | Lat. N & Long. W |
| 14 | [NE] | W | 0 | 270° | 20 | 63.6 | 57.9 | 57.9 | | 1°05′.5 | 28°15′.4 N<br>30°05′ W |
| 15 | [NE] | W | 0 | 270° | 27 | 85.9 | 78.1 | 78.1 | | 1°28′.5 | 28°15′.4 N<br>31°33′.5W |
| 16 | [NE] | W | 0 | 270° | 39 | 124 | 112.8 | 112.8 | | 2°07′.7 | 28°15′.4 N<br>33°41′.2W |
| 17 | [NE] | W | 1° W | 269° | 50 | 159 | 144.7 | 144.7 | 2′.5 | 2°44′ | 28°12′.9 N<br>36°25′.2W |
| 18 | [NE] | W | 2° W | 268° | 55 | 174.9 | 159.2 | 159.1 | 5′.5 | 3°00′.2 | 28°07′.4 N<br>39°25′.4W |
| 19 | [NE] | W | 4° W | 266° | 25 | 79.5 | 72.3 | 72.1 | 5′ | 1°21′.7 | 28°02′.4 N<br>40°47′.1W |
| 20 | var. | WNW | 4°.5W | 288° | 7 | 22.3 | 20.3 | 19.3 | | 22′ | 28°08′.7 N<br>41°09′.1W |
| 21 | E'ly | W | 5° W | 265° | 13 | 41.3 | 37.6 | 37.5 | 3′.3 | 42′.4 | 28°05′.4 N<br>41°51′.5W |
| 22 | [SW] | WNW | 5°.5W | 287° | 30 | 95.4 | 86.8 | 82.9 | 25′.3 | 1°34′ | 28°30′.7 N<br>42°25′ W |
| 23 | [WSW] | NW | 6° W | 309° | 22 | 70 | 63.7 | 49.5 | 40′.1 | 56′.5 | 29°10′.8 N<br>44°21′.5W |
| | | | | | | | | | | | |

*Monday, 24 September*

'Sailed on his course to the W day and night, and made about 141/2 leagues.'

*Tuesday, 25 September*

'Made 41/2 leagues to the W and in the night 17 leagues to the SW.' The SW course was in quest of a false landfall.

*Wednesday, 26 September*

'Sailed W until afternoon; thence SW, day and night 31 leagues.' Used WSW as mean.

*Thursday, 27 September*

'W 24 leagues.'

*Friday, 28 September*

'Sailed W. Proceeded day and night with calms 14 leagues.'

*Saturday, 29 September*

'W 24 leagues.'

*Sunday, 30 September*

'W. Proceeded day and night because of calms 14 leagues.'

*Monday, 1 October*

'W 25 leagues. Great rainfall.'

*Tuesday, 2 October*

'W 39 leagues.'

*Wednesday, 3 October*

'Usual course 47 leagues.'

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 91% | | ° ′ | ° ′ | Lat. N & Long. W |
| 24 | var. | W | 6° W | 264° | 14.5 | 46.1 | 42 | 41.8 | 4′.4 | 47′.7 | 29°06′.4 N<br>45°09′.2W |
| 25 | var. | W | 6° W | 264° | 4.5 | 14.3 | 13 | 12.9 | 1′.4 | 14′.7 | 28°26′.3 N |
| | var. | SW | 7° W | 218° | 17 | 54 | 49.2 | 30.3 | 38′.7 | 34′.5 | 45°58′.4W |
| 26 | [E] | WSW | 7° W | 240.5° | 31 | 98.6 | 89.7 | 78 | 44′ | 1°28′.3 | 27°42′.3 N<br>47°26′.7W |
| 27 | [E] | W | 7° W | 263° | 24 | 76.3 | 69.5 | 69 | 8′.5 | 1°18′ | 27°33′.8 N<br>48°44′.7W |
| 28 | [E'ly] | W | 7° W | 263° | 14 | 44.5 | 40.5 | 40.2 | 5′ | 46′ | 27°28′.8 N<br>49°30′.7W |
| 29 | [E'ly] | W | 7° W | 263° | 24 | 76.3 | 69.5 | 69 | 8′.5 | 1°18′ | 27°20′.3 N<br>50°48′.7W |
| 30 | [E'ly] | W | 7° W | 263° | 14 | 44.5 | 40.5 | 40.2 | 5′ | 45′.3 | 27°15′.3 N<br>51°34′ W |
| Oct. 1 | [E'ly] | W | 7° W | 263° | 25 | 79.5 | 72.3 | 71.8 | 8′.9 | 1°20′.5 | 27°06′.4 N<br>52°54′.5W |
| 2 | [NE] | W | 7° W | 263° | 39 | 124 | 112.8 | 112 | 13′.7 | 2°05′.8 | 26°52′.7 N<br>55°00′.3W |
| 3 | [NE] | W | 7° W | 263° | 47 | 149.5 | 136 | 135 | 16′.6 | 2°31′.5 | 26°36′.1 N<br>57°31′.8W |

*Thursday, 4 October*

'W 63 leagues.'

*Friday, 5 October*

'Sailed his course,' 7½ knots, 'made 57 leagues because wind moderated during night.'

*Saturday, 6 October*

'West 40 leagues.'

*Sunday, 7 October*

'Course W,' made 9 knots for two hours and then 6 knots; 'proceeded up to an hour before sunset 23 leagues. Admiral decided to turn the prow WSW an hour before sunset. Went the whole night about 5 leagues.'

Change of course to follow the migrating birds.

*Monday, 8 October*

'Sailed WSW and proceeded 11½ or 12 leagues.'

*Tuesday, 9 October*

'SW 5 leagues. Wind changed, ran W by N 4 leagues, afterwards 11 leagues; by day and night 20½ leagues.' Used 20 leagues.

*Wednesday, 10 October*

'Sailed WSW' at 6 to 9 knots, 'and between day and night made 59 leagues.' Best day's run of this passage.

*Thursday, 11 October*

'Sailed WSW, heavy sea, proceeded up to sunset 27 leagues. After sunset sailed on his original course to the W,' made about 9 knots, 'and up to 2 A.M. proceeded 22½ leagues.'

'Two hours after midnight appeared the land at a distance of 2 leagues.' The position given is that at 2 A.M., 12 October.

*Friday, 12 October*

'At two hours after midnight appeared the land at a distance of two leagues.' Truly it began a New Day.

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Oct. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 91% | | ° ′ | ° ′ | Lat. N & Long. W |
| 4 | [NE] | W | 7° W | 263° | 63 | 200.3 | 182.3 | 180.9 | 22′.2 | 3°22′ | 26°14′.1 N<br>60°53′.8W |
| 5 | [NE] | W | 6° W | 264° | 57 | 181.3 | 165 | 164.1 | 17′.2 | 3°02′.5 | 25°56′.9 N<br>63°56′.3W |
| 6 | [NE] | W | 5° W | 265° | 40 | 127.2 | 115.8 | 115.4 | 10′.1 | 2°08′.5 | 25°46′.8 N<br>66°04′.8W |
| 7 | [NE] | W | 4° W | 266° | 23 | 73.1 | 66.6 | 66.4 | 4′.7 | 1°14′ | 25°36′ N |
| | [NE] | WSW | 2.5°W | 245° | 5 | 15.9 | 14.9 | 13.1 | 6′.1 | 14′.5 | 67°33′.3W |
| 8 | [NE] | WSW | 1.5°W | 246° | 11.5 | 36.6 | 33.3 | 30.4 | 13′.5 | 33′.5 | 25°22′.5 N<br>68°06′.8W |
| 9 | [SE] | SW | 1° W | 244° | 5 | 15.9 | 14.5 | 10.1 | 10′.5S | 58′.2 | 25°19′.5 N |
| | [SSW] | WbN | 1° W | 280° | 15 | 47.7 | 43.4 | 42.7 | 7′.5N | | 69°05′ W |
| 10 | [NE] | WSW | 0.5°E | 248° | 59 | 187.6 | 170.7 | 158.3 | 1°03′.9 | 2°54′ | 24°15′.6 N<br>71°59′ W |
| 11 | [NE] | WSW | 0.5°E | 248° | 27 | 85.9 | 78.1 | 72.4 | 29′.3S | 19′ | 23°47′.4 N |
| | [E] | W | 1° E | 271° | 22.5 | 71.6 | 65.1 | 65.1 | 1′.1N | 1°11′ | 74°29′ W |

### *HOMEWARD PASSAGE*

The problem of computing the homeward passage from Samaná Bay, Hispaniola, to *Niña's* landfall at the island of Santa Maria in the Azores, is essentially the same as that of the outward passage. We have the same sort of data in the Journal, and no more. Using the same method of computation as I have described above, I find that the percentage of overestimate to be applied to each day's run as recorded in the Journal is 15%. Consequently, 85% of each day's run as recorded by Columbus has been computed. Or, in other words, the league that Columbus actually used on the homeward passage measured 2.7 nautical miles, as compared with the league of 3.18 nautical miles that he thought he used. This difference may be accounted for primarily by the fact that *Niña* was the Admiral's flagship on the homeward passage, *Santa Maria* having been wrecked near Cape Haitien on Christmas Eve, 1492. Anyone who transfers from a large sailing vessel to a smaller one is apt to imagine that the latter travels faster than she really does. Your point of observation is several feet nearer the water, and the smaller ship makes more fuss about it. *Niña's* burthen is known to have been between 50 and 60 tons in the unit of the day; but *Santa Maria*, according to various estimates, measured between 100 and 200 tons. The reproduction of *Santa Maria* made by the Spanish government in 1927 after prolonged study by naval architects and historians, and which we of the Harvard Columbus Expedition found completely convincing, measures 120 tons by 1492 standards.

The other factor involved in this increased overrun was in all probability leeway. On the outward passage the fleet had the wind on the stern almost every day; but on the homeward passage they had it on the nose from 17 to 31 January inclusive. During all that time *Niña* was sailing close-hauled, and the Journal shows, by a comparison of courses with wind directions, that she could lay up 5 or 6 points to the wind, according as the sea was light or heavy. All vessels of that era made considerable leeway, how much we do not know; so any attempt to compute it would be a mere guess. But in those 15 days of sailing close-hauled *Niña* was constantly sagging off to the westward, and her true position on 31 January when she caught the westerlies and straightened out on a due E course for Spain, must have been far to the westward of where Columbus thought she was. We have no evidence that he made any allowance for leeway, in fact we may infer from his reporting that *Niña* always sailed as close as 5 or 6 points to the wind, that he did not. Moreover, on the last

four days of their passage he experienced a winter gale from the westward, *Niña* rolling and pitching frightfully in high cross seas, and his dead-reckoning under these conditions must have been inaccurate.

The key to Columbus's plan for the homeward passage is a sentence in his Journal for 16 January, 'he turned to the direct course for Spain, NE by E.' By his plotting of the voyage thus far, he supposed that that rhumb led directly to Cadiz or Huelva, and doubtless hoped that he could stick to it, as he had to the W course on the outward passage. Actually this NE by E course, from the point where he then was, a few miles N of Cape Engaño, Hispaniola, would have led through the Azores and on to the English Channel. Why Columbus made this mistake we can only guess. It was, to be sure, very near the beginning of a great circle course for Spain, but of course he knew nothing of great circle navigation. The probable explanation is that he had grossly overestimated the distance run alongshore in Cuba and Hispaniola.[13]

Although Columbus has been credited with sailing a 'scientific' course back to Spain, it is evident from his belief that he could sail a straight course that he knew little of the trades and nothing of the northern westerlies. How could he? His fleet had made one passage in the northeast trades, but how could he guess that they blew all winter? He had had several days of westerlies along the coasts of Cuba and Hispaniola and a westerly wind the first day out; why should not God send him westerlies all the way home? He undoubtedly knew that the winter winds around the Azores blew mainly from the N and W, but he had no means of guessing that the belt of westerlies extended all the way to 'the Indies.' If he had had the knowledge that the Spanish navigators gained in the next forty years, he would have started his sheets as soon as the tradewind returned, and sailed N by E to Bermuda, where his fleet would have caught the westerlies and stretched out for the Azores. As it was he 'squeezed' *Niña* and *Pinta* as close to the trades as they could stand, and chose the port or the starboard tack with reference to his presumed 'direct course for Spain,' NE by E. That is, when the wind blew from the quadrant between SE and ENE, as fortunately it generally did, he kept the caravels close-hauled on the starboard tack, steering between ENE and N by E. When the wind backed into the quadrant between NE by E

[13] In his Letter on the First Voyage, composed at sea before he made the Azores, Columbus twice says that he had followed the coast of Cuba 107 leagues (340 nautical miles) 'in a straight line,' and the coast of Hispaniola '188 great leagues' (598 nautical miles) 'in a straight line.' Cecil Jane, *Select Documents on the Voyages of Columbus*, I, 4-5, 12-13. The actual distances he covered, measured from cape to cape, are about 177 and 288 nautical miles respectively. Consequently he supposed his point of departure to be about 475 miles further east than it really was, and from that position a NE by E course would have hit Spain or Portugal.

and N, he came about on the port tack, sailing between ENE and SE by E. That explains the southerly 'jogs' shown on the chart for 18 and 26 January. But, for the most part, and fortunately, the fleet made northing.

The Journal for 27 to 30 January shows that the trades were gradually petering out. And at sunset 31 January, when according to my reckoning he was in latitude 31° 45.6′ N, very near that of Bermuda (32° 15′), he caught the first of the westerlies. He then set an ENE course, one point south of his 'direct course for Spain,' because he knew that he was well north of the desired tracks. And on the evening of 3 February he tried a latitude observation on Polaris to verify his position. This was his only recorded attempt to make a celestial navigation on either passage. But he had waited too long, and moreover, was 'rusty.' Three days of westerlies had raised quite a swell, and *Niña* was rolling so heavily that the Admiral was unable to catch Polaris through the sight-holes of his quadrant or astrolabe. But he observed with the naked eye that 'the North Star appeared very high, as on Cape St. Vincent.' And as Cape St. Vincent is on the 37th parallel, and *Niña,* according to my reckoning was just crossing the 35th, that was pretty good. At any rate it was enough for Columbus. At sunrise 4 February he set the course due E, and from that point on he steered E whenever wind permitted.

The only occasions that he deflected from that course were on 8 February when, probably by reason of a light NE wind, he steered E by S and SSE, and on 14 and 15 February, when he was forced to scud ENE, NE by E, and NE before a storm. It was that circumstance which gave him his landfall on Santa Maria. He had not intended to call at the Azores, anticipating trouble with the Portuguese (and he had it too, plenty of it); but when shortly after sunrise 15 February 'they sighted land, appearing ahead to the ENE . . . 5 leagues distant,' he naturally sought it out in order to obtain much needed water, wood, ballast, and fresh provisions. By this time *Niña* had unwittingly sailed into the opposite quadrant of the cyclone, and the wind whipped around to the NE, so that she was 72 hours coming up to the land that seemed only 16 miles distant at the landfall.

Again, it is a tribute to the accuracy of Columbus's dead-reckoning, that, after applying the A.D. 1500 compass variation to his courses, and the factor of 85% to his distances, the plotted course from Hispaniola to Santa Maria brings *Niña* to a position less than four miles north and thirteen minutes of longitude E of the point where he says that the island was sighted bearing ENE distant 16 nautical miles.

In the pages that follow, it must be remembered that each 'day's work' of the homeward passage begins at sunset of the *preceding* day. The computed positions in latitude and longitude under each day's log are for sunset on the day mentioned. Owing to the unaccounted for leeway in the first part of this passage, these positions are less accurate than those of the outward-bound passage, for they are worked out by an average overrun of 15% for the whole distance from Hispaniola to Santa Maria.

On 6, 7, and 10 February the Journal records an interesting comparison of positions between the Admiral, Vicente Yañés Pinzón (Captain of *Niña*) and her three pilots. The reader can easily plot their respective estimates on the chart, remembering always that these pilots had no Bowditch 'Appendix IV' to give them accurate maritime positions of the places with which they compared *Niña's* position. In every case Columbus's reckoning was far nearer her position, as I compute it, than theirs. When they sighted Santa Maria, some identified it as the Rock of Sintra near Lisbon, others as Madeira, only the Admiral claimed it to be one of the Azores, but even he had to come to an anchor and hail someone ashore before he could tell which of the Azores it was. Such were the uncertainties of navigation in 1493.

## HOMEWARD PASSAGE

*Wednesday, 16 January*

Samaná Bay, Hispaniola. 'Left three hours before daybreak . . . with the land breeze.' Until he got out from under the lee of Balandra Head course E by S for six miles. 'Afterward, with the wind W, turning the bow to the E by N to go to the island of Carib.' Changed course to SE. 'Turned to the direct course for Spain, NE by E.' This course began just as Balandra Head, his actual departure, dropped below the horizon, bearing 272° true, dist. 43 miles.

*Thursday, 17 January*

'Yesterday at sunset wind moderated.' Remember that every day's work on homeward passage begins at sunset the day before and ends at sunset on date at head of work. 'Proceeded 14 glasses [each a half hour or a little less] until relieving the first watch [23h.] at 3 knots. Until sunrise at 6 knots. Up to sunset 11 leagues E.'

*Friday, 18 January*

'Sailed with light wind E by S 10 leagues, and later SE by E 7½ leagues, until sunrise. After sunup sailed whole day with light wind from NE, ENE and E more or less. Her head pointed N and at times N by E and NNE. Thought they would have made 15 leagues.' I used N by E as average. Obviously she came about on starboard tack at sunrise and wind fluctuated from ENE to E.

*Saturday, 19 January*

'Proceeded this night 14 leagues N by E and 16 leagues NE by N. After sunrise sailed NE with fresh wind ESE and later NE by N, made 21 leagues to sunset.' I divided the distance between these two courses. All day on starboard tack.

*Sunday, 20 January*

'Wind fell this night, but at intervals a few squalls.' Made 5 leagues NE. 'After sunrise made 11 Roman miles to the SE, later to the NNE 9 leagues.' Smooth sea, 'thanks be to God.' Came about on port tack at sunrise, later to starboard.

*Monday, 21 January*

Sunset to midnight, 'sailed to the N by E with wind E by N' at 6 knots, made 14 leagues. 'Afterwards to the NNE' at 6 knots, 'and so in the whole night it came to 26 leagues N by E.' I used N by E ½ E as the course actually made good. 'After the sun rose sailed to the NNE with the same E wind and at times NE by N . . . made 21 leagues, knocking off one that he lost because he bore down on *Pinta* in order to speak her. Air very cold.'

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 85% | | ° ′ | ° ′ | Lat. N & Long. W |
| 16 | N | EbS | 1° E | 102° | | | 6* | 5.9 | 1′.2 S | 6′.2 | |
| | W | EbN | 1° E | 80° | 16 | 50.9 | 37.2 | 36.6 | 6′.4 N | 38′.7 | |
| | W | SE | 1° E | 136° | 2 | 6.4 | 5.4 | 3.8 | 3′.9 S | 4′ | 19°32′ N |
| | W | NEbE | 0 | 56° | 12 | 38.2 | 32.4 | 26.9 | 18′.2 N | 28′.5 | 68°02′.1 W |
| 17 | W | NEbE | 0 | 56° | 21 | 66.8 | 56.7 | 47 | 37′.7 | 50′ | 20°03′.7 N |
| | [NNE] | E | 0 | 90° | 11 | 35 | 29.7 | 29.7 | 0 | 31′.6 | 66°40′.5 W |
| 18 | [NEbN] | EbS | 0 | 101° | 10 | 31.8 | 27 | 26.5 | 5′.2 S | | |
| | [NEbE] | SEbS | 0 | 124° | 7.5 | 23.8 | 20.3 | 16.8 | 11′.4 S | | 20°26′.9 N |
| | [EbN] | NbE | 0 | 11° | 15 | 47.7 | 40.5 | 7.7 | 39′.8 N | 54′.3 | 65°46′.2 W |
| 19 | [EbN] | NbE | 0 | 11° | 14 | 44.5 | 37.8 | | 37′.1 | | |
| | [EbS] | NEbN | 0 | 34° | 16 | 51 | 43.2 | | 35′.8 | | |
| | ESE | NE | 0 | 45° | 10 | 31.8 | 27 | | 19′.1 | | 22°23′.5 N |
| | [EbS] | NEbN | 0 | 34° | 11 | 35 | 29.7 | | 24′.6 | 1°12′ | 64°34′.2 W |
| 20 | [ESE] | NE | 1° W | 44° | 5 | 15.9 | 13.5 | 9.4 | 9′.8 N | | |
| | [ENE] | SE | 1° W | 134° | 2.75 | 8.7 | 7.4 | 5.3 | 5′.2 S | | 22°50′.7 N |
| | [E] | NNE | 1.5° W | 22° | 9 | 28.6 | 24.3 | 9.1 | 22′.6 N | 25′.9 | 64°15′ W |
| 21 | EbN | NbE | 2° W | 15° | 26 | 82.7 | 70.2 | 18.2 | 67′.8 | | 24°51′.8 N |
| | E | NNE | 2.5° W | 20° | 21 | 66.8 | 56.7 | 19.4 | 53′.3 | 41′ | 63°40′ W |

* By plotting on chart.

*Tuesday, 22 January*

'Yesterday after sunset he sailed with wind E and a little southerly' for 8 'glasses' at 6 knots and made '18 leagues' (obvious error for 8 leagues). Then N by E for 4.5 leagues, afterwards NE 3 leagues. Afterwards ENE 15 leagues. The elapsed time on these three legs was respectively 6, 4, and 9 'glasses' (divide by two for hours).

*Wednesday, 23 January*

'Many variations in the wind. Calculating everything, and giving the care that seamen are accustomed to and should give, . . . he would have made good that night 21 leagues NE by N.' This proves that the Admiral could work a traverse table.

*Thursday, 24 January*

'. . . Made good this night, taking into account the many fluctuations, to the NE . . . 11 leagues. From sunrise to sunset, to the ENE 14 leagues.'

*Friday, 25 January*

'To the ENE for a part of the night, 13 glasses, 9½ leagues; afterwards to the NNE another 6 Roman miles (after) sunrise, all day, wind moderated, went to the ENE 7 leagues.'

*Saturday, 26 January*

'This night proceeded 14 leagues to the E by S. After sunrise he sailed at times to the ESE and at others to the SE. Went up to 11 A.M. 40 Roman miles, afterwards came about and then went close-hauled, and until night proceeded northerly 6 leagues.'

*Sunday, 27 January*

'Yesterday after sunset proceeded NE and N by E' at 3¾ knots, 'which in 13 hours would be 16½ leagues; after sunrise proceeded NE 6 leagues until midday, and thence until sunset, made 3 leagues ENE.'

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 85% | | ° ′ | ° ′ | Lat. N & Long. W |
| 22 | [E, S'ly | NNE | 4.5°W | 18° | 8 | 25.4 | 21.6 | 6.7 | 20′.5 | | |
| | [EbN] | NbE | 5° W | 6° | 4.5 | 14.3 | 12.2 | 1.3 | 12′.1 | | |
| | [ESE] | NE | 5° W | 40° | 3 | 9.5 | 8.1 | 5.1 | 6′.1 | | 25°45′ N |
| | [SE] | ENE | 5.5°W | 62° | 15 | 47.7 | 40.5 | 35.7 | 19′ | 54′ | 62°45′ W |
| 23 | [EbS] | NEbN | 6° W | 28° | 21 | 66.8 | 56.7 | 26.6 | 50′ | 29′.9 | |
| | [S-SW] | NE | 6° W | 39° | 6.5 | 20.7 | 17.5 | 11 | 13′.6 | 12′.2 | 26°57′ N |
| | [S-SW] | ENE | 6.5°W | 61° | 6.5 | 20.7 | 17.5 | 15.3 | 8′.4 | 17′.1 | 61°46′ W |
| 24 | [ESE] | NE | 7° W | 38° | 11 | 35 | 29.7 | 18.4 | 23′.4 | 20′.5 | 27°39′.2 N |
| | [SE] | ENE | 7.5°W | 60° | 14 | 44.5 | 37.8 | 32.7 | 18′.8 | 36′.8 | 60°48′.7W |
| 25 | [SE] | ENE | 7.5°W | 60° | 9.5 | 30.2 | 25.7 | 22.3 | 12′.9 | | |
| | [E] | NNE | 7.5°W | 15° | 1.5 | 4.8 | 4 | 1 | 3′.9 | | 28°05′.5 N |
| | [SE] | ENE | 7.5°W | 60° | 7 | 22.3 | 18.9 | 16.4 | 9′.6 | 45′ | 60°03′.7W |
| 26 | [NE] | EbS | 8° W | 93° | 14 | 44.6 | 37.8 | 37.7 | 2′ S | 42′.5 | |
| | [NE] | ESE | 8.5°W | 104° | 10 | 31.8 | 26 | 26.7 | 6′.5S | 30′ | 28°13′ N |
| | [ENE] | N | 8.5°W | 351° | 6 | 19 | 16.2 | 2.2 | 16′ N | 2′ | 58°53′.2W |
| 27 | [EbN] | NbE | 8.5°W | 2.5° | 16.5 | 52.5 | 44.6 | 2.4 | 44′.5 | 2′.6 | |
| | [ESE] | NE | 9° W | 36° | 6 | 19 | 16.2 | 9.5 | 13′.1 | 10′.9 | 29°14′.8 N |
| | [SE] | ENE | 9.5°W | 58° | 3 | 9.5 | 8.1 | 6.9 | 4′.2 | 8′ | 58°31′.7W |

*Monday, 28 January*

'All night he sailed ENE; made 9 leagues. Between sunrise and sunset proceeded ENE 5 leagues.'

*Tuesday, 29 January*

'Sailed ENE and made in the night with S and SW winds 91½ leagues; in the whole day made 8 leagues. . . .'

*Wednesday, 30 January*

'In all this night made 7 leagues ENE; by day ran to the S by E 131½ leagues.' I take S by E to be a copyist's error for N by E, since it is unlikely that the Admiral would have altered his fleet's course over 100° at sunrise and swung 156° back to the northward at sunset without noting any change in the wind.

*Thursday, 31 January*

'Sailed this night 30 Roman miles to the N by E, afterwards 16 leagues to the NE . . . 16 leagues. From sunrise to the night proceeded 131½ leagues ENE.'

*Friday, 1 February*

'Proceeded this night 161½ leagues; by day ran on the same course 291¼ leagues.' The big run today, in comparison with those of the previous 10 days, shows that the fleet had struck westerlies.

*Saturday, 2 February*

'Proceeded this night to the ENE 10 leagues. By day, with the same wind aft,' he ran at 5¼ knots, so that in 11 hours he proceeded 191¼ leagues.

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 85% | | ° ′ | ° ′ | Long. W Lat. N & |
| 28 | [SE] | ENE | 9.5° W | 58° | 14 | 44.6 | 37.8 | 32 | 20′ | 36′.5 | 29° 34′.8 N<br>57° 55′.2 W |
| 29 | SW, S | ENE | 9.5° W | 58° | 17.5 | 55.6 | 47.25 | 40 | 25′ | 46′.2 | 29° 59′.8 N<br>57° 09′ W |
| 30 | [SE] | ENE | 10° W | 57.5° | 7 | 22.3 | 18.9 | 16 | 10′ | 18′.6 | 30° 46′.3 N |
| | [EbN] | NbE | 10° W | 1° | 13.5 | 42.9 | 36.5 | 6.4 | 36′.5 | 7′.4 | 56° 43′ W |
| 31 | [EbN] | NbE | 10° W | 1° | 7.5 | 23.8 | 20.25 | 3.5 | 20′.2 | 4′ | |
| | [ESE] | NE | 10° W | 35° | 8.75 | 27.8 | 23.6 | 13.5 | 19′.3 | 15′.7 | 31° 45′.6 N |
| | [SE] | ENE | 10° W | 57.5° | 13.5 | 42.9 | 36.5 | 30.7 | 19′.8 | 36′ | 55° 47′.3 W |
| Feb. 1 | [W] | ENE | 10° W | 57.5° | 45.75 | 145.5 | 123.5 | 104 | 67′.5 | 2° 02′.3 | 32° 53′.1 N<br>53° 45′ W |
| 2 | W | ENE | 10° W | 57.5° | 29.25 | 93 | 79 | 67 | 43′.3 | 1° 20′ | 33° 36′.4 N<br>52° 25′ W |

*Sunday, 3 February*

'This night, wind aft, made 29 leagues. By day sailed on his course to the ENE,' made 7½ knots, 'and so in 11 hours 27 leagues.' This was the night that Columbus failed to catch Polaris with his astrolabe, but noted it was as high as on Cape St. Vincent (lat. 37° N); this rough sight, in connection with the change of weather next day, decided him to alter his course.

*Monday, 4 February*

'This night sailed to the E by N' at a speed of 7½ to 9 knots, went 32 leagues. 'After sunrise altered his course to the E; proceeded the whole day 19¼ leagues.' A new course set for Spain.

*Tuesday, 5 February*

'This night sailed E; made 13½ leagues. By day makes 7½ knots, and so in 11 hours 27½ leagues.' I give the wind as NW as the usual quarter for a winter gale in that region.

*Wednesday, 6 February*

'Sailed this night E'; made 8¼ knots in the 13 hours of night, 35¼ leagues. By day made 11½ knots, and hence 38½ leagues. 'Vicente Yanes found that today in the morning Flores bore N and Madeira E. Roldan said that Fayal bore NE and Porto Santo E.' Both were several hundred miles out. This was the best day's run of the entire voyage.

*Thursday, 7 February*

'Sailed this night E'; made 7½ knots and so in 13 hours 32½ leagues; by day in 11 hours 22 leagues. 'This morning the Admiral found himself to the S of Flores 75 leagues.' The pilot Peralonso Niño thought they were then between the meridians of Terceira and Santa Maria, and 12 leagues N of the parallel of Madeira.

*Friday, 8 February*

'Proceeded this night at 3 Roman miles an hour to the E for a short time, and afterwards made a course *a la quarta del sueste*' (this course taken to mean SSE). 'Proceeded the whole night 12 leagues. Sunrise to sunset, 13 leagues to the SSE.' Presumably the wind turned E to force this alteration of course. Las Casas says that on this day and the next the winds were 'soft and variable.'

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Feb. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 85% | | ° ′ | ° ′ | Lat. N & Long. W |
| 3 | W | ENE | 10° W | 57.5° | 56 | 178 | 151 | 127 | 82′.2 | 2°33′ | 34°58′.6 N<br>49°52′ W |
| 4 | [W] | EbN | 10° W | 69° | 32.5 | 103.3 | 87.8 | 82 | 31′.5 | 1°40′ | 35°39′ N |
| | [W] | E | 10° W | 80° | 19.25 | 61.2 | 52.7 | 52 | 9′ | 1°03′.5 | 47°08′.5W |
| 5 | [NW] | E | 9° W | 81° | 41 | 130.4 | 110.7 | 109.3 | 17′.3 | 2°15′ | 35°56′.3 N<br>44°53′.5W |
| 6 | [NW] | E | 8° W | 82° | 74 | 235.3 | 200 | 198.1 | 27′.8 | 4°05′ | 36°24′.1 N<br>40°48′.5W |
| 7 | [NW] | E | 7° W | 83° | 54.5 | 173.3 | 147.1 | 146 | 18′ | 3°02′ | 36°42′.1 N<br>37°46′.5W |
| 8 | [E] | SSE | 5° W | 152.5° | 12 | 38.2 | 32.4 | 14.7 | 28′.9 | 18′.1 | 35°42′ N |
| | [E] | SSE | 4.5°W | 153° | 13 | 41.3 | 35.1 | 15.9 | 31′.2 | 19′.2 | 37°09′.2W |

*Saturday, 9 February*

'A small part of this night went 3 leagues SSE, afterwards S by E, afterwards NE until 10 A.M., 5 more leagues, afterwards until night, went 9 leagues to the E.' The wind was evidently working around through S. When headed NE he was on starboard tack.

*Sunday, 10 February*

'After sunset he sailed E the whole night 32½ leagues; from sunrise to nightfall 24¾ leagues.' Vicente Yáñes Pinzón and the 3 pilots plotted the course and said *Niña* was 5 leagues E of Santa Maria and near Madeira and Porto Santo. Columbus thought she was due S of Flores and on the parallel of Casablanca (33° 34′ N).

*Monday, 11 February*

'Proceeded this night on his course [E] 39 leagues, and the whole day ran 16½ leagues.'

*Tuesday, 12 February*

'Sailed to the E at 6 Roman miles an hour this night, and made up to daylight 18¼ leagues. Here he began to have heavy sea and tempest, and if the caravel had not been . . . well fixed he would have been afraid to be lost. The day would have run 11 or 12 leagues with much toil and peril.'

*Wednesday, 13 February*

'From sunset to daybreak he labored much with the wind and very heavy sea and tempest. Proceeded most of the night under bare poles; afterwards set a little sail and made 13 leagues. This day wind moderated a little but increased again. Waves crossed each other. Made 13¼ leagues.'

*Thursday, 14 February*

'Proceeded this night NE by E 13 leagues. Made ENE course and afterwards NE by E for 6 hours, and in them made 7½ leagues. Afterwards, with showers and squalls the wind changed to the W, scudded before it with the foresail 5 hours, with the sea very confused, and would have made 2½ leagues to the NE.'

*Friday, 15 February*

'Proceeded to the ENE and in 13 hours of the night made 13 leagues. After sunrise they sighted land, appearing ahead to the ENE.'

| Day | Wind | Course | | | Distance | | | Departure | Diff. Lat. | Diff. Long. | Position |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Feb. | | Mag. | Var. ° | True ° | Lgs. | Naut. 100% | Miles 85% | | ° ′ | ° ′ | Lat. N & Long. W |
| 9 | [E] | SSE | 4.5°W | 153° | 3 | 9.5 | 8.1 | 3.6 | 7′.1 S | 4′.4 | |
| | [ESE] | NE | 4° W | 41° | 5 | 15.9 | 13.5 | 8.8 | 10′.2 N | 10′.8 | 35°46′.8 N |
| | [S] | E | 4° W | 86° | 9 | 28.6 | 24.3 | 24.2 | 1′.7 N | 29′.5 | 36°24′.5W |
| 10 | [W] | E | 4° W | 86° | 57.5 | 182 | 154.5 | 154.1 | 10′.8 | 3°10′ | 35°57′.6 N<br>33°14′.5W |
| 11 | [W] | E | 3° W | 87° | 55.5 | 176.5 | 149.9 | 149.7 | 7′.9 | 3°05′ | 36°05′ N<br>30°09′.5W |
| 12 | [SW] | E | 1° W | 89° | 30.25 | 96.2 | 81.8 | 81.8 | 1′.4 | 1°41′ | 36°06′.9 N<br>28°28′.5W |
| 13 | [NW] | E | 1° W | 89° | 26.25 | 83.5 | 70.9 | 70.9 | 1′.2 | 1°27′.5 | 36°08′.1 N<br>27°01′ W |
| 14 | | NEbN | o | 56° | 13 | 41.3 | 35.1 | 29 | 19′.6 | 36′ | |
| | | ENE | o | 67.5° | 7.5 | 23.7 | 20.3 | 18.5 | 8′ | 23′ | 36°40′.3 N |
| | W | NE | o | 45° | 2.5 | 8 | 6.75 | 4.6 | 4′.6 | 5′.5 | 25°56′.5W |
| 15 | [WSW] | ENE | o | 67.5° | 13 | 41.3 | 35.1 | 32.2 | 13′.5 | 40′.5 | 36°53′.8 N<br>25°16′ W |
| | | | | | | | | | | | |

It was not until the morning of Monday 18 February that *Niña* anchored off the village of Anjos on the north coast of Santa Maria, and found out where she really was. Columbus remained in and about Santa Maria until about midnight the following Sunday 24 February, when he took his departure for Cape St. Vincent, steering due E. I have not attempted to plot the leg of the homeward passage from Santa Maria to Lisbon, because for four days the Journal gives no distances, and for two days no courses. On 27 February he ran into a cyclonic storm similar to the one encountered SW of the Azores. It blew *Niña* northeasterly for two days, E by N for two more, then whipped around to the NW, split all her working sails, and sent her scudding under bare poles until the Rock of Sintra was sighted, about 3 A.M. 4 March. Columbus then set a storm trysail, managed to hold her off all night, and in the morning scudded into the Tagus and took refuge in the port of Lisbon. After refitting and spending a weekend with the King of Portugal, he got under way again on 13 March, sailed around Cape St. Vincent, and at noon on Friday 15 March 1493 crossed the bar of Saltes and anchored at Palos, the port whence he had departed on the previous 3d of August.

*Pinta* parted from *Niña* in the storm of 14 February, and missed sighting the Azores. At some date between 21 February and 1 March she made the port of Bayona near Vigo, about 5° N of the parallel of her destination, Palos. It seems obvious that Martin Alonzo Pinzón shared the opinion of his younger brother and of *Niña's* pilots that on 12 February the fleet was several hundred miles S of its actual position, and that after the storm of 12-15 February was over, he shaped *Pinta's* course accordingly. He could not possibly have been blown as far N as Bayona, for he arrived there before the second storm that *Niña* encountered. In view of the theory advanced by numerous dry-land geographers (particularly those of the Spanish nation) that Columbus was no seaman, and dependent on the Pinzón family for navigating his fleet, this comparison of *Pinta's* landfall with *Niña's* is significant.

There is no doubt about it, Columbus was a great seaman and dead-reckoning navigator. And as competent seamanship and keeping a good dead reckoning were about 99% of navigation in 1492, I maintain that his performance out and home, not to speak of his other three voyages, marks him as one of the greatest navigators in history.

# *The C. S. S.* Stonewall; *Ship of Many Names and Many Flags*

BY LOUIS H. BOLANDER

A SHIP, unique in the annals of the American Navy, and perhaps unique in the annals of any navy, the armored cruiser *Stonewall,* was built for the Confederacy in the latter days of the Civil War. She was launched in 1864 and was last heard of in 1891, but in that period of twenty-seven years she was known by six separate and distinct names, and flew the flag of seven different maritime powers. For months she was a veritable headache to the diplomats of the United States, France, Denmark, Spain and Portugal. In her story are elements of heroism, of trickery, of drama, of deceit, of humor, and of sublime optimism in a dying cause. When she finally became the property of the Confederate States she was named the *Stonewall,* in honor, of course, of the famous Southern chieftain, Stonewall Jackson, one of the most remarkable soldiers produced by the War between the States. Had the Civil War been prolonged for a few months it is barely possible that she might have become a real threat to the success of the Federal arms, almost as great a threat as was the great soldier after whom she was named.

In the early spring of 1863 it became apparent to the Confederate Government that the havoc wrought on merchant shipping by raiders like the *Alabama* and the *Florida* was of immense benefit to the South, for not only was it driving the Stars and Stripes from the ocean, but it had compelled the North to detach some of her best cruisers from the blockade to chase down the raiders. To carry on the good work started by the *Florida* and *Alabama,* the Confederate Secretary of the Navy, Mr. S. R. Mallory, directed Captain James D. Bulloch, Confederate secret agent in France, to arrange for the building of four more ships similar to the *Alabama* and her sister raiders.

Captain Bulloch sought out the services of a well-known French shipbuilder, M. L. Arman, of Bordeaux. Arman had done a great deal of satisfactory work for the French Government. At that time he was building two iron-cased floating batteries and a large troop-ship for the Govern-

ment. He was an influential politician, too, being a deputy in the *Corps Legislatif* for the Gironde, and had no difficulty in obtaining personal interviews with the Minister of State or even with the Emperor himself, Napoleon III.

After protracted negotiations with Arman, Bullock finally arranged for the construction of four steam corvettes of about 1,500 tons each, and 400 horse-power, to be armed with twelve or fourteen 6-inch rifled guns. The designs and specifications had been agreed on by 15 April 1863, and by 1 June encouraging progress had been made. The contract called for their completion within ten months. As Arman could not build the four ships in this time he arranged with another French shipbuilder, M. J. Voruz of Nantes, for the construction of two of them.

After these ships were well under way, on 30 June Bulloch received a despatch from Mallory, dated 6 May. This message was considered of such importance that it was sent by a special courier, Lieutenant G. S. Shyrock, of the Confederate Navy. The despatch was enclosed with a copy of a secret act passed by the Confederate Congress which appropriated £2,000,000 for the building, equipping, manning and furnishing armored vessels for the Confederacy. In the despatch Mallory stated that Bulloch had been selected by the President as the man best suited for securing such ships. He was untrammeled by instructions as to the size and details of these vessels, but was subject to the consideration that they must be able to enter and to navigate the Mississippi River; that their first trial must be a long ocean voyage; that their future antagonists would carry 11-inch and 15-inch guns; and that they must be completed at the earliest possible date. Bulloch recognized fully the difficulties in the way of the solution of the problems dumped in his lap by President Davis and Secretary Mallory. To navigate the Mississippi any vessels built must be of light draught and comparatively short. They must have great steam-power to contend with the rapid current, and they must also be capable of turning in a short space.

After long conferences with Arman a design was selected that seemed to meet the requirements. The dimensions were to be as follows: Length between perpendiculars, 171 feet, 10 inches; breadth to outside of armor, 32 feet, 8 inches; mean draught with 220 tons of coal on board, battery, and all stores, 14 feet, 4 inches; engines, 300 horsepower; armor plating 4¾ inches amidships tapering to 3½ inches at the extremities; one heavy gun to be mounted forward in a fixed armored turret and two lighter rifled guns aft. The forward gun was to be fired on a line with the keel or on either bow. On 16 July 1863, just thirteen days after the re-

pulse of Pickett's charge at Gettysburg and twelve days after Pemberton's surrender to Grant at Vicksburg, of which, of course, nothing was yet known in Europe, Bulloch closed a contract with Arman for the building of two ships of this design. Bulloch would have preferred to place the contract in England, but it had become known that Queen Victoria's Government would allow no ship-of-war to leave an English port unless her ownership was determined clearly and explicity. On the other hand the Richmond Government was satisfied from certain friendly hints and suggestions that Napoleon III and his ministers would connive at the building of such ships within the borders of France and would place no undue obstacles in the way of their reaching the Confederates.[1]

We must bear in mind the military situation in Virginia at this time. Except for a drawn battle at Antietam, the Confederates under the leadership of Robert E. Lee had won an almost unbroken string of victories, that is, up to July 1863. The very day, 6 May, that Mallory penned his despatch to Bulloch saw the triumphant close of the Chancellorsville Campaign, triumphant for the Confederates, at least. It did look as if the Confederates had an excellent chance of winning the war and securing their independence. Napoleon III, to back a winner, was willing to violate the law of nations by allowing warships to be built in France and to be delivered to a belligerent.

On 23 November 1863 Bulloch reported to Mallory that the ironclads were about three-fifths done and that the four corvettes would be ready on contract time. But by this time news about the ships and their ultimate destination had begun to leak out. Mr. William L. Dayton, American Minister to France, had formally protested against the building of the ships to the French Minister of Foreign Affairs, and had backed up his protests with copies of letters which his secret agents had procured for him. These gave indubitable proof that the ironclads of Arman were destined for the Confederates. Bulloch asserted that clerks and servants had been bribed by Northern secret service agents, and he was right beyond a doubt. Even the confidential clerk of M. Voruz, the Nantes shipbuilder, had disappeared and with him had gone letters and papers relating to the whole transaction. Matters had come to such a pass by 18 February 1864 that Bulloch reported to his superiors: 'I am now convinced that we cannot get the ironclads to sea, and unless otherwise instructed, I will make no more contracts for such vessels except with such a pecuniary guarantee for actual delivery upon the ocean as will secure us

[1] J. D. Bulloch, *Secret Service of the Confederate States in Europe* (New York: G. P. Putnam's Sons, 1884), II, 1-50.

against loss.' He reported that M. Arman had been warned that the two ironclads would never be allowed to sail and that the four corvettes could never be armed in France but must be sold nominally, at least, to some foreign merchant and be despatched as ordinary trading vessels, wholly unarmed. Work on the two ironclads, now known appropriately enough from the secrecy surrounding them, as the *Sphinx* and the *Cheops*, lagged. Then M. Arman was called to Paris for an interview with the Emperor. Napoleon III berated him severely, threatened him with imprisonment, and ordered him to sell the ships at once. Furthermore the sale must be *bona fide* and the Government must be furnished with proof that the sale was genuine. The reason for Napoleon III's seeming change of heart is now apparent. Lee had lost at Gettysburg; Vicksburg was now a Northern stronghold; Grant had won a series of astounding victories at Chattanooga, Lookout Mountain and Missionary Ridge; and in the person of this quiet soldier it appeared that at last the North had found a leader well equipped to oppose the famous Lee. The cause of the Confederacy seemed definitely hopeless. The Emperor was committed to his Mexican imperialistic venture and therefore wished to do nothing to offend the North. For if the North should win, woe betide any French troops caught in Mexico.

On 1 December 1864, Mr. Dayton died, and on 12 January 1865 Mr. John Bigelow became the new Minister. The Peruvian Minister to Paris, M. Barreda, soon informed Mr. Bigelow that his Government had purchased the two Nantes corvettes, under the names of the *Shanghai* and *San Francisco*. Both of these ships had sailed fully armed under orders from the Peruvian Government. Soon after Mr. Bigelow was also relieved to learn that the two Bordeaux corvettes had been sold by M. Arman to Prussia. This sale Bigelow found to be genuine: the vessels were given the names *Augusta* and *Victoria*. The Prussian Navy also acquired the *Cheops* and named her the *Prinz Adalbert*. For many years thereafter this vessel was the strongest unit in the Prussian fleet. This left only the *Sphinx* of the six vessels that had originally been contracted for by Bulloch.[2] When Lieutenant E. W. Very, U.S.N. published his book, *Navies of the World*, in 1880, the *Prinz Adalbert*, the *Augusta* and the *Victoria* were still a part of the Prussian Navy but the *Shanghai* and the *San Francisco* were no longer on the Peruvian Navy list, unless they then appeared under different names. Of the *Prinz Adalbert* he wrote:

> *Prinz Adalbert*, armored belt, double redoubt, long ram bow, round stern, single screw, half sail power. The belt encircles the water line to the height of the upper

[2] J. Bigelow, *France and the Confederate Navy* (New York: Harper & Bros., 1885), pp. 48-69.

deck. The curve of the ram bow is carried up, forming a spar-deck redoubt, giving protection to a single bow gun working in one port. A second redoubt, well aft, gives protection to two guns each working in two ports for fore-and-aft and beam fire. A superstructure aft cuts off the stern fire from these guns, and the forward redoubt cuts off the bow fire. The shape of both the redoubts is nearly circular. The *Stonewall* (Confederate) belongs to this type. Sister ships.[3]

But the *Sphinx* was still left for Mr. Bigelow to worry about and she proved to be a real worry. He received word that Arman had sold her to Denmark. Then late in January 1865 he received word that an ironclad of mysterious nationality was lying off the island of Houat in Quiberon Bay, the same bay where many years before John Paul Jones had heard the first salute given to the Stars and Stripes. Bigelow, with the *Sphinx* heavily on his mind, sent a telegram to the American Consul at Nantes:

Legation, United States, Paris, January 26, 1865.

M. Montagnie, Dear Sir:

Have you any evidence that the ironclad lying at Houat belongs to the Confederates. What is her name? And what was the former name of the *Olinde*? Send an agent, if you can find one that can be relied on, for full information. Our Consul at Bordeaux has advised me of an ironclad built by Arman for the Danish Government, having been rejected and being on her way back to Bordeaux. Either the *Olinde* or the ram at Houat may be one of these. Write me without delay if you learn anything.

Late the same afternoon Bigelow heard from the Consul. (He must have telegraphed instead of waiting for the mails.) The *Sphinx*, the Consul informed Bigelow, had left Bordeaux under the name of *Stoerkodder* bound for Copenhagen. She had left Copenhagen under the name of *Olinde* with a Danish crew of forty-two men, and was now lying in Quiberon Bay. A vessel sent from the yard of Messrs. Dubigeon fils of St. Nazaire had brought to the *Olinde,* alias *Stoerkodder,* alias *Sphinx* a shipload of coal and had taken off her Danish crew; also a steamer flying the British flag had come alongside this *Olinde* with a supply of guns, ammunition, and a crew which were taken on board. Bigelow was sure that the worst had happened, and went at once into action. He wrote at once to the French Minister of Foreign Affairs and laid the known facts before him.

If, as I have reason to believe, she is armed and ready for service, it would be a fraud upon the Imperial Government for her to leave before she has been stripped of her warlike munitions.

He also stated that since she was a new vessel she would have no claim to the shelter of a French port for repairs.

[3] E. W. Very, *Navies of the World* (New York: John Wiley & Sons, 1880), p. 79.

Your Excellency, I trust, will not think I am too hasty in concluding that this vessel also is designed to prey upon American commerce under the flag of the so-called Confederate Government. I hasten to bring these facts to Your Excellency's attention that measures may immediately be taken to prevent a violation of that neutrality which the Imperial Government has shown itself so justly solicitous to maintain.

This letter was written late on Saturday afternoon of 28 January. The next day, though it was Sunday, Mr. Bigelow paid a call on the French Minister of Marine, M. Chasseloup-Laubat. The latter professed ignorance of the movements of the mysterious vessel but added that M. Arman had deceived him twice before and might try it again. He took the ground that the ship had been sold to Denmark, that Arman, himself, had exhibited a contract for the sale of the ship to Denmark before he was allowed to send her from Bordeaux, and therefore the responsibility for the movements of the vessel was Denmark's and not his. It was not until 31 January that Bigelow had an opportunity to interview the Danish Minister, Count Moltke. Moltke informed him that before the *Sphinx*, or *Stoerkodder*, or *Olinde* left Bordeaux the Danish inspector had informed Arman that Denmark would not accept her as she was not delivered according to contract. But that, nevertheless, Arman had sent her to Copenhagen with a French crew under the charge of a M. Henri A. de Rivière, that on her arrival at Copenhagen the French crew had been sent home, and that after lying off Copenhagen for three months with the Danish Government still persisting in their refusal to accept her, Rivière had hired a Danish captain and crew to take the ship back to Bordeaux. The Danish pilot and captain had been to see him, Count Moltke, the day before. They gave as their reason for stopping in Quiberon Bay that the engineers were unskilful, the crew mutinous, and the oil for her engines had given out. The latter reason struck the Count as rather a novelty in the category of marine disasters. He was, therefore, suspicious of the good faith of the whole transaction. Of one point both diplomats were certain. The *Olinde* had never passed out of Arman's control and had never for one moment been under the control of the Danish Government.

The principal reason for the Danes' persistent refusal to accept the vessel was quite evident. Arman's contract with Denmark bound him to deliver the vessel by 14 June 1864, under the penalty of a thousand francs for every day's delay. The time of her delivery was most important to Denmark for at that time she was engaged in an unequal struggle with Prussia and Austria for the retention of the duchies of Schleswig and

Holstein. Her land force was small and she relied mainly on her fleet for defence. The acquisition of an armored ram like the *Sphinx* would have been of incalculable importance. But Arman could not, or, at least, did not, deliver her until October 1864, when the Schleswig-Holstein question was settled and Denmark had been obliged to submit to her enemies. The ship was by the time of her actual delivery a useless luxury for Denmark and she quite understandably refused to accept her.[4] In Bigelow's autobiography, *Retrospections of an Active Life*, he reproduces in full a letter from a former Confederate, Colonel Caleb Huse, written from Highland Falls, New York, 11 October 1888, twenty-three years after these events. The letter seems worth quoting in part for it throws a new light on why the Danes refused to accept the ship and on the tricky nature of Rivière, Arman's agent. Colonel Huse had met Rivière in London, and Rivière had told him of a trick he had played upon the Danish officers designated to pass upon the ship. 'Rivière,' wrote Colonel Huse, 'then went on to say that the ship had been taken from Bordeaux to Copenhagen; that a trial trip had been made of her there; that this trial trip would have proven entirely successful had not he, R., deliberately spoiled the trip, and that too, without the knowledge of Arman, who was on board, and who was very desirous to have the Danes take her. He then went on to say how he had invited the party all down to lunch, then excused himself, and had gone and himself opened a bilge-cock, so as to partially fill one of the compartments and so affect the speed, although there might be kept up a full head of steam and not even the captain or engineer know what had been done. When the party came on deck after lunch they were all surprised—and no one so much as Arman—to find the ship running much slower than when they were on deck before. R. assured me that not even then did any one but himself know the cause of the falling off in speed. He said he had deliberately planned to get the ship into the hands of the Confederates.' [5] Colonel Huse went on to say that Rivière was one of the most accomplished and one of the most unscrupulous men that he had ever known. Perhaps that type of man would not hesitate to fabricate the story he told Huse, a story that does not fit in with the facts as Count Moltke and Mr. Bigelow knew them.

On 2 February Bigelow sent a message to the Foreign Office reciting the whole complicated transaction and putting the responsibility for allowing a Confederate raider to be fitted out in French waters squarely up to the Imperial Government. Two days later the infuriated Bigelow re-

[4] J. Bigelow, *Retrospections of an Active Life* (New York: Doubleday, Page & Co., 1909-1913), II, 283-289.

[5] Ibid, p. 452.

ceived word from the American chargé d'affaires in Madrid that the *Olinde,* now under the name of *Stonewall* had put into Ferrol, Spain, and had gone into dock for repairs.

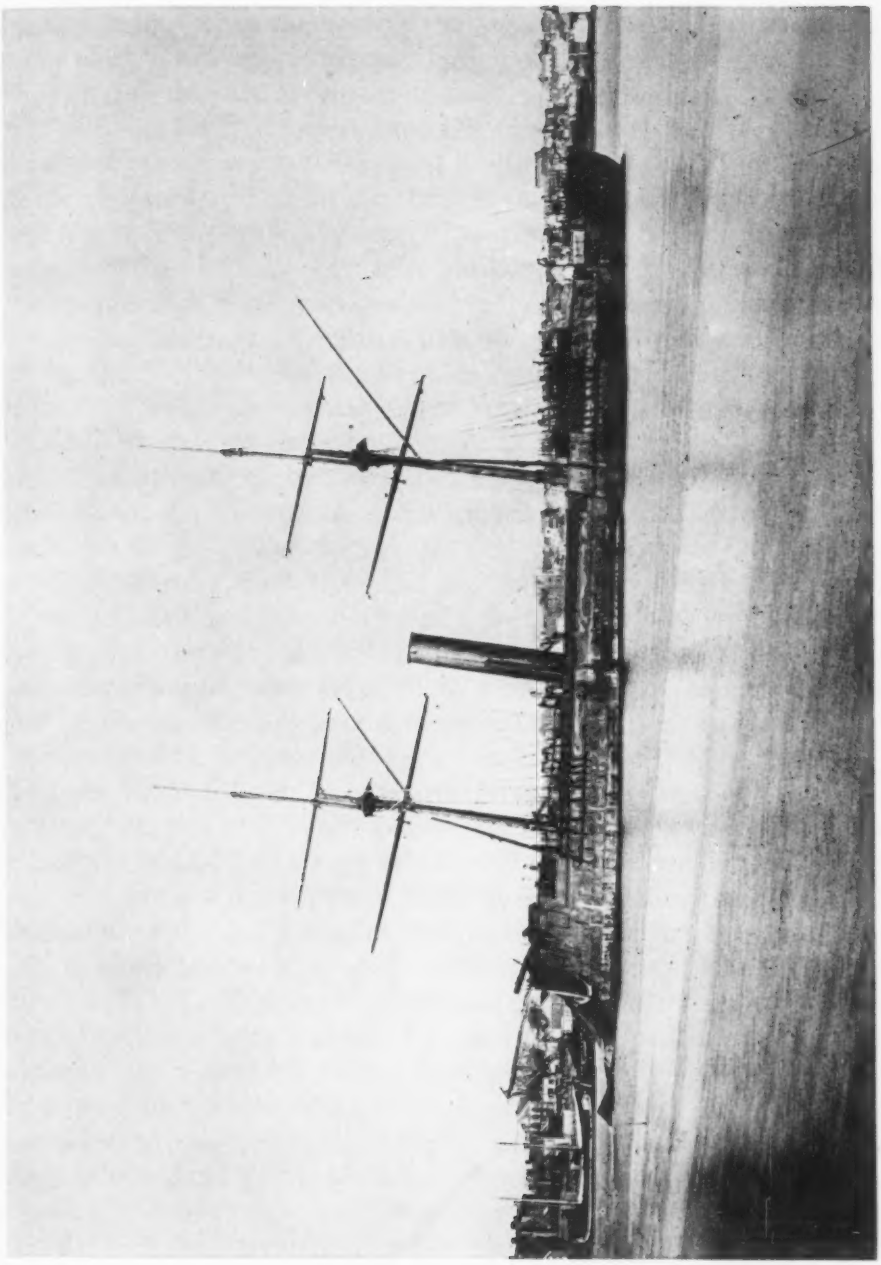
But what did happen to this ship of many names that placed her in Confederate hands after the Emperor had strictly forbidden her sale to them? Fortunately there has been preserved to us a copy of the agreement made between Bulloch and Rivière, Arman's tricky agent. This agreement clears up some points which mystified Mr. Bigelow but which he was shrewd enough to rightly suspect. The agreement was signed at Paris 16 December 1864, six weeks before she set her Danish crew ashore at Quiberon Bay. It reads:

> The armor-clad ram, *Sphinx,* built by Messrs. Arman, of Bordeaux, under contract with J. D. Bulloch, now lies at Copenhagen fully equipped for sea. . . . The *Sphinx* has been sold under certain conditions to the Government of Denmark and while en route to Denmark she was taken into a Swedish port, was nominally sold to a Swedish gentleman, Mr. N———, and then proceeded under the Swedish flag to Copenhagen, where she now lies in charge of Mr. Puggard, a banker of that city. The Government of Denmark being no longer pressed by the demands of war, does not seem anxious to confirm the bargain of sale, and some defect or failure in the conditions on the part of the seller presents a favourable opportunity for annulling it in a manner which it is thought will not arouse suspicion. . . . M. de Rivière proposes to manage the further negotiations with the Danish Government in such a way as to cause its agent to reject the *Sphinx* . . . and to bring the *Sphinx* from Copenhagen as if to return her to M. Arman at Bordeaux . . . Assuming that there will be no opposition on the part of the Danish authorities, the *Sphinx* will be cleared from Copenhagen in the regular formal way, as if bound to Bordeaux. M. de Rivière engages to take her to a rendezvous appointed by J. D. Bulloch to receive her.

For his services Rivière was to receive, and did receive, a handsome sum, 375,000 francs, out of which all expenses and commissions were to be paid. Rivière was to engage a competent Danish crew and to induce some of them, if possible to enter Confederate service. At Copenhagen Rivière was to be joined by a Confederate States naval officer.[6]

An able man, Captain Thomas Jefferson Page, C.S.N. was selected to command her. Page had been in the United States Navy for many years before the war. On 10 January Bulloch had notified the Confederate Secretary of the Navy that Page, accompanied by Lieutenant R. R. Carter, also of the Confederate Navy, had been sent to Copenhagen. Bulloch had ordered Page to name the ship the *Stonewall,* 'an appellation not inconsistent with her character, and one which will appeal to the feelings and sympathies of our people at home.' Captain Page and Lieutenant Carter

[6] Library and Naval War Records Office, *Official Records of the Union and Confederate Navies in the War of the Rebellion. Series I* (Washington: Government Printing Office, 1894-1922), III, 723-4.



C. S. S. *Stonewall* about 1866

had sailed from Copenhagen with the *Stonewall* and a Danish crew on 7 January 1865. The crew, evidently, had no desire for Confederate service for they all quit the ship at Quiberon Bay, leaving Page and Carter alone.[7]

Page had received his orders from Captain Samuel Barron, C.S.N., the commander of all the naval forces of the Confederacy in Europe. These orders were dated 17 December 1864. He was given a large assignment. He was first to break up the Federal blockading fleet off Wilmington. The dispersion of the blockaders must be unquestionable and clear. If possible he was to intercept Yankee ships coming from California, make a dash at New England ports, and then to cruise off the Newfoundland banks and break up the Northern fishing fleet in those waters. What he was to do with his one vessel when these slight errands had been successfully accomplished we shall never know.[8]

The efficient Bulloch had arranged with a Mr. Crenshaw, owner of a number of blockade-runners, and a former soldier in Lee's army, for a steamer, the *City of Richmond*, to meet the *Stonewall* at the Quiberon rendezvous. Seventeen men who had served on the raider *Florida* were brought to Calais and placed aboard the *Rappahannock* which had been interned there by Napoleon III and together with a number of the *Rappahannock's* men were selected to serve with the seamen from the *Florida* on the *Stonewall*. These men were brought over to Gravesend on the morning of 11 January and taken on board the *City of Richmond* by Lieutenant W. F. Carter. Lieutenant Hunter Davidson of the Confederate Navy was put in command of the *City of Richmond* and put to sea at once but was forced by a heavy gale to seek shelter under the Cherbourg breakwater. He did not get away from Cherbourg until the eighteenth.

Meanwhile Page was doing his best to get his ram through the Cattegat in spite of much bad weather and frequent snowstorms. The *City of Richmond* with the Confederate seamen and supplies reached Quiberon safely on the twentieth, but the *Stonewall* did not put in an appearance until the twenty-fourth.[9] To effect this meeting at the rendezvous without a slip Barron had arranged for Page to announce the time of his leaving Copenhagen through a Copenhagen banker. This banker was to send the message to a broker, Mr. A. Mabbs, 17 Saville Row, London. And to keep any messages from being read by the prying eyes of a Northern secret agent, Bulloch had arranged for the messages to be sent in code. For example:

[7] Ibid, p. 721.

[8] Ibid, p. 719.

[9] J. D. Bulloch, *Secret Service of the Confederate States in Europe* (New York: G. P. Putnam's Sons, 1884), II, 84-94.

| | |
|---|---|
| The affair is in a favorable condition. | Can now fill your order for teak. |
| We can sail any time. | Will you buy at price quoted? |
| Will sail tomorrow. | Will close at price quoted. |
| Expedition must be totally abandoned. | Negotiation closed. |
| Ship stopped. | Offer withdrawn. |

Messages of vital importance could in this way be transmitted with secrecy and yet appear to be innocent telegrams sent from a peaceful Copenhagen banker to his equally peaceful London broker.[10]

The steamer sent by Rivière did not bring enough coal, but on the twenty-eighth the *Stonewall* and the *City of Richmond* left Quiberon Bay bound for Madeira. On the next day according to Lieutenant Davidson: 'Old Neptune thought proper to pay his respects to the first ironclad expedition across his waters, and so he commenced. It blew a storm at times, with as heavy a sea as I have ever seen in any part of the world. The *Stonewall*, which we kept close to night and day, would often ship immense seas, they seeming at times to cover her from knightheads to taffrail.' At noon on the thirtieth Captain Page signalled that he was short of coal and would have to put in to Ferrol, Spain. As the *City of Richmond* flew the English flag and her appearance with the *Stonewall* might complicate matters for the latter and as the *City of Richmond* was carrying valuable supplies for Lee's army Davidson decided to leave his consort and put into Funchal, from whence he wrote Bulloch on 6 February.[11]

In the meantime Page had run his ironclad, now leaking badly due to defective construction around her rudder casing, into the port of Corunna and the next day took her across to Ferrol, where he arrived on 2 February. The officers of the Spanish naval arsenal here politely offered him 'all facilities' for the repair and outfitting of his vessel. But on the seventh Page wrote that on that day a Spanish officer had visited him and had brought the unwelcome news that permission to repair his damages had been suspended because of the protest of the American Minister at Madrid and that he must restore his cargo to the ship. But the commanding officer of the arsenal informed him the Madrid Government was considering his case, and that everything would be all right in a few days.

Three days later, on the tenth, the United State frigate *Niagara*, Captain Thomas Craven, arrived at Corunna, nine miles across the bay from Ferrol. A few days later she was joined by the U.S.S. *Sacramento*. From their vantage point both kept watch over the luckless *Stonewall*. They could either attack the ram when she left port or could send word to

[10] Library and Naval War Records Office, *Official Records of the Union and Confederate Navies in the War of the Rebellion. Series I* (Washington: Government Printing Office, 1894-1922), III, 728.

[11] Ibid, pp. 732-734.

Washington that she was on her way so that a warm reception could be expected when she appeared off any blockaded port. The rough handling of Father Neptune necessitated such repairs that it became evident to Page that it would take several weeks before the *Stonewall* was ready for the transatlantic crossing. By 11 February, at least, word had reached Europe of the fall of Fort Fisher. The army of Northern Virginia was in a desperate position and could scarcely hope for success in a spring campaign against the army of Grant. Page, of course, knew all this and determined to go to Paris to consult with Bulloch and Barron about the best course to be pursued. Should the enterprise be abandoned? After an anxious conference with the Confederate Commissioners, it was decided that though the prospects for Confederate success were gloomy indeed, it was the duty of Page to carry on at all costs and to spare no effort to bring aid to the hard-pressed Lee. He was to cross to Bermuda where he would pick up some additional seamen from the *Florida* and additional ordnance stores, as well. He was then to strike a blow at Port Royal, South Carolina, in the hope of impeding General Sherman's advance through the Carolinas. Port Royal was believed to be Sherman's supply base. While Page was in Paris, Lieutenant Carter was left in command of the ram. To Carter's alarm the *Niagara* and the *Sacramento* moved over to Ferrol. Fearing that Craven proposed an attack such as had been made in the neutral harbor of Bahia when the *Florida* was run down by the *Wachusett,* Carter got up steam to be ready for any emergency. When sparks were seen flying from the *Stonewall's* funnel, a Spanish officer was sent over from the Navy Yard who asked if Carter intended to attack the *Niagara*. 'I replied that we had no such intention but purposed to defend ourselves from an attempt to repeat the affair at Bahia.' The Spaniard replied: "This is not Brazil. The Admiral requests that you will let your fires go out, and warns you against any attempt to break the peace." Two guard boats were also stationed near us, and remained there every night while the *Niagara* was in port.'

One delay after another kept the *Stonewall* in port so that it was not until 21 March that she was ready for sea. This was only sixteen days before the surrender at Appomattox, about which Page, of course, knew nothing until long after the event. He quite expected the two Federal ships to attack him once he was beyond the three-mile limit. But he made no efforts at concealment of his departure. The upper spars to the lower masts were struck and stowed on deck, and the boats were detached from the davits. On the morning of 24 March the *Stonewall* steamed out of the harbor accompanied by a Spanish warship to the three-mile limit. There she stood off and on for the remainder of the day with her colors flying

but the two Federal vessels remained at anchor. Page remained off Ferrol till dark and then steamed down the coast towards Lisbon where he arrived in due course, the *Niagara* arriving about thirty-six hours later.[12]

Why did Craven refuse to accept battle? He was known throughout the Navy as an able officer and as a courageous man. There is only one possible answer. And it is the answer that he gave at his subsequent court-martial. 'The odds in her [the *Stonewall's*] favor were too great, and too certain to admit of the slightest hope of being able to inflict upon her even the most trifling injury,' and that, had he gone into the engagement the *Niagara* would most undoubtedly have been most easily and promptly destroyed.[13] In this statement he was very possibly correct and he might have added that many of his men would most surely have lost their lives. Nevertheless, it is difficult to imagine a Nelson or a Farragut or a Dewey adopting the course that he elected to pursue.

The log of the *Niagara* for 24 March 1865 makes interesting reading, interesting because of what is omitted:

'March 24 — Corunna, Spain. From 8 to meridian. The rebel ram *Stonewall* went to sea, followed by the Spanish frigate *Conception*; made preparations for getting under way; at 3.45 the Spanish frigate *Conception* returned to Ferrol.'

The log of the *Sacramento* for 24 March is even less enlightening: 'March 24 — Corunna, Spain. At 3.45 P.M. a Spanish frigate stood into Ferrol.'

Craven's court-martial for this action convened at Washington on 7 November 1865. Vice-Admiral Farragut acted as President of the Court. The Court found him guilty of failure in his duty to 'join battle with the *Stonewall* on the 24th day of March,' and recommended that he be suspended from duty for two years. The Secretary of Navy, Gideon Welles, was dissatisfied with the Court's findings as not being sufficiently drastic and returned the record to the Court with a caustically-worded comment. But the revised findings of the Court, which imposed the identical penalty, disgruntled the Secretary to such an extent that he set aside the proceedings of the Court and he relieved Captain Craven of arrest.[14]

At Lisbon Captain Page was met with no warm welcome. The Portuguese knew that the Confederate Government was near its end, and Page

[12] J. D. Bulloch, *Secret Service of the Confederate States in Europe* (New York: G. P. Putnam's Sons, 1884), II, 96-100.

[13] Library and Naval War Records Office, *Official Records of the Union and Confederate Navies in the War of the Rebellion. Series I* (Washington: Government Printing Office, 1894-1922), III, 467-468.

[14] Ibid, pp. 469-470.

was made aware of it. He was allowed to purchase a supply of coal, but the authorities were anxious to be rid of him.[15] From Lisbon he steamed to Teneriffe, where he took on more coal. On 25 April he hauled up for Bermuda but having a short supply of coal shaped his course for Nassau, arriving there on 6 May. From Nassau he steamed to Havana, reaching that port on 11 May. To his sorrow there he learned that General Lee and General Joe Johnston had surrendered, and that President Davis was a fugitive. His funds were running low. To pay off his men he offered to surrender his ship to the Cuban authorities if they would advance him funds to pay off his crew. This sum amounted to $16,000. The Governor-General agreed. Thus, the *Stonewall* came under the flag of the fifth nation in her brief career. In their order they were, France, Sweden, Denmark, the Confederacy, and now Spain. On the same day he wrote Bulloch of his action. He wrote that he considered that he had made the best possible terms under the circumstances. He would be no better off in a French or Mexican port. He had had experience with the English and could expect nothing from them. A sorrowful note runs through this letter, for which one can scarcely blame him: 'The *Stonewall* can not make anything of a run at sea, because she wants important repairs to make her engines seaworthy and reliable, and she could make no fight in the seaway usual in the Gulf against such odds [the Federal ironclads waiting for him to come out of Havana] even if I believed I had a Government and a country to fight for.[16]

The Federal commanders in the Gulf feared that she might attempt an attack on Galveston, and before her transfer to the Cuban authorities they warned the Governor-General that if the Spanish Government allowed the ram to proceed to sea it would be countenancing piracy, since there was no existing Confederate Government. This dispatch was signed by Rear-Admiral C. K. Stribling, commander of the East Gulf Blockading Squadron, and Brigadier-General John Newton, commander of the Key West District. The Governor-General of Cuba, Señor Domingo Dulce, replied in most dignified terms. When the *Stonewall's* repairs were made she would be required to leave port, but he could do nothing in the meantime until he received instructions from his Government. He concluded this letter with 'God preserve Your Excellencies many years.' Warnings were sent to all the Federal commanders in the Gulf to be on their guard against her.[17] When news came of her surrender to the Governor-General, all dread of her was past.

[15] Ibid, pp. 743-744. [16] Ibid, pp. 747-748. [17] Ibid, XXII, 138.

On 14 July 1865, the Spanish Minister in Washington announced to the Secretary of State that the Governor-General had been ordered to surrender his ship to proper representatives of the United States. The Minister tactfully suggested that his Government be reimbursed for the $16,000 advanced to Captain Page the previous May, but pointed out that this was not a condition for the delivery of the vessel.[18]

Because of a scourge of yellow fever prevailing at Havana that summer it was not until 21 October 1865 that Commander Alexander Murray, commanding the U. S. S. *Rhode Island,* was ordered to bring the *Stonewall* to the Washington Navy Yard after paying over the $16,000 to the Cuban authorities. As she was not considered a seaworthy vessel Murray was ordered to put into the nearest port if bad weather threatened and he was to use every precaution to bring her safe up the Potomac.[19] Thus she came under the flag of the United States, the sixth in her career.

But she was destined to sail under the flag of still another nation and to receive two more names. On 9 August 1867 she sailed from the Washington Navy Yard for Norfolk under the command of Commander George Brown flying the Japanese flag. She had been sold to the Government of Japan for $470,000. From Hampton Roads she shaped her course to Yokohama where she arrived 24 April 1868. A revolution was then in progress and she was placed again under the flag of the United States. On 8 or 9 March 1869 she was finally delivered to the Japanese Government. She was named the *Kotetsu.* (Lieutenant Very in his *Navies of the World* called her the *Ko-tets-een.*) While under Japanese ownership she took part in a bloody Civil War under the command of Admiral Yenomoto. After the war she was renamed the *Azuma* and for many years remained the strongest unit in the Japanese Navy. She took part in the Saga Rebellion of 1874, and in the Satsuma Rebellion of 1877. In 1888 she was condemned and was sold to a fishing company. But she was still afloat in 1891.[20]

[18] Ibid, III, 566.

[19] Ibid, XVII, 596-597.

[20] J. Bigelow, *Retrospections of an Active Life* (New York: Doubleday, Page & Co., 1909-1913), IV, 259-261.

# *The Arizona Fleet*

*BY HAZEL EMERY MILLS*

STEAMBOATING on the Colorado River reached its height during the boisterous years of the Sixties, Seventies and Eighties — the boom days of Arizona Territory — days of fabulously rich mining discoveries and spectacular gunplay between frontier outlaws. But even as steamboating flourished, railheads crept toward Arizona from both the east and the west, and the railroad meant the beginning of the end of the river-borne commerce.[1] Circumstance and the geographical position of the Colorado had forced the main path of commerce into Arizona to lie from the south to north; with the coming of the railroad the paths of commerce fell into their natural east-west positions along the old emigrant trails. As in the days of Forty-Nine, the river became only a barrier to be crossed. Today it is difficult to believe that steamboats over one hundred and fifty feet long once floated between the shifting banks and the high-walled canyons of the lower Colorado, so deeply has the age of the streamliner and the automobile buried the past of the river. When the last steamboat whistled its farewell, even the adobe towns on the Colorado's banks began to crumble; Ehrenberg, La Paz, Mohave City, Hardyville — their ghostly remains stand as monuments to those forgotten days when steamboats tied up at their landings. Yet for three decades the winding course of the lower Colorado was the only practicable route for shipping heavy merchandise into the Territory, and for a half century steamboats splashed up and down the river hauling away ore and hides and landing supplies for the towns and forts and the miners and scattered farmers in the river valleys.

The navigation of the Colorado first began because the United States Army needed the river as a route of supply for Fort Yuma, established at

[1] The Southern Pacific began building east from Los Angeles to Yuma in 1875 and reached the Colorado in May 1877. The Atlantic and Pacific started to build west from Albuquerque across Northern Arizona toward the Colorado in 1881 and connected with the Southern Pacific at Needles in August 1883.

the junction of the Gila and Colorado rivers in 1851.[2] It was in November 1850 that the first American sailing vessel, the U. S. transport schooner *Invincible*, sailed from San Francisco for the Colorado River, a nineteen hundred mile voyage around Lower California and up the Gulf. On board was Lieutenant George H. Derby[3] with instructions to survey the head of the Gulf and the river as an aid in opening the new transportation route. To guide them up the strange channel, Derby and Captain A. H. Wilcox of the *Invincible* had a survey and map of the mouth of the Colorado made in 1829 by Lieutenant R. W. Hardy of the British Navy who had explored the river's mouth in his ship, the *Bruja*, while on a pearl fishing expedition in the Gulf.[4] Although Derby reported that the Colorado could be navigated by a small stern-wheel steamboat, the first attempt to supply the fort by way of the river was by flat boat. In October 1851, George A. Johnson received a contract to provision Fort Yuma and sailed from San Francisco in the schooner *Sierra Nevada*, Captain A. H. Wilcox, with the frames of two flat boats, 50 feet long, 18 feet beam, and 3 feet hold.[5] He put the boats together at the river's mouth, but one sank there, and he was many weeks hauling the cargo from the schooner to the fort on the remaining boat. During his trips up and down the river, Johnson decided that steamboats similar to those operating on the Ohio could be used on the Colorado. By December 1852 a steamboat was running on the river, and for the next twenty-five years sailing vessels and steamships made regular runs from San Francisco to the Colorado.

[2] Troops had been sent to the Colorado in 1849 and again in 1850 to protect the emigrants coming into California over the Southern trail from the Yuma Indians. Because of the difficulty of getting supplies to the soldiers over the desert from San Diego, the post had to be abandoned each time.

[3] Lieutenant George H. Derby was also a humorist of note, writing under the pen names of John Phoenix and Squibob. The title of his report is *A Reconnaissance of the Gulf of California and the Colorado River*. 32d. Cong., 1 Sess., *Senate Ex. Doc.* 81, 1852.

[4] Lieutenant R. W. Hardy, *Travels in the Interior of Mexico, in 1825, 1826, 1827, and 1828* (London, 1829). Hardy named the islands and points at the head of the Gulf and the mouth of the river as far up as Arnold's Point. Here a side channel of the Colorado flows into the main channel, and Hardy made the error of thinking he had reached the junction of the Gila and Colorado, mistaking the main channel of the Colorado for the Gila.

[5] Captain George Alonzo Johnson was the real developer of steamboat navigation on the Colorado. He shipped from New York in November 1848 as a member of the crew of the steamer *Panama* and finally reached San Francisco 4 June 1849. After going to the mines and lightering in San Francisco Bay, he organized a party to go down to the Yuma crossing of the Colorado and run a ferry. He soon became interested in navigating the river so he could get the Army contract to supply Fort Yuma. In 1853 Johnson, Captain A. H. Wilcox, and Benjamin Hartshorne, one of the 1850 ferry partners, formed George A. Johnson and Company. The navigation of the Colorado was only one of Johnson's many interests. He lived at San Diego, and there married Estafana Alvarado and became owner of Los Penasquitos Rancho. He was a large scale rancher and cattle raiser and was interested in horse racing. He served as assemblyman for San Diego County in 1863. In 1876 he was the contractor who for the government engineers turned the water of the San Diego River into False Bay. He died in Old Town, San Diego 27 November 1903.

An increasing number of sailing vessels — schooners, brigs and barks — stood out from San Francisco's Golden Gate bound for the Colorado during the late 1850's and the 1860's.[6] At first mainly supplies for the Army and later all kinds of household goods, mining and farming machinery, and even newsprint and the trees that were to flourish along Yuma streets and on the farms of the Salt River Valley crowded the holds of the vessels. At the mouth of the river, deck hands transferred the cargoes to the waiting steamboats and barges and loaded on the return freight brought downstream by the river boats. Until the mining rush of the Sixties and the beginning of the settlement of the Territory by miners, cattlemen and farmers after the Civil War, Arizona had little or nothing to export, and the chief product carried back to San Francisco was Colorada River mud — it made good ballast. Sometimes the ships touched at Guaymas or Mazatlan for ore and hides or paused at Carmen Island in the Gulf to take on salt. But by the middle Sixties Arizona began shipping her raw products to San Francisco: sacks of high-grade silver, lead and copper ore, bullion, bales of wool, hides, and bundles of beaver skins.

As trade grew on the San Francisco — Colorado River run in the Sixties and Seventies, it became apparent that sailing vessels could no longer adequately serve the Territory. Merchants at Yuma and Tucson fumed over the slow and uncertain delivery of goods; travelers fretted at the tedious passage. Even with every available inch of canvas spread to the wind the best time in which a sailing ship could make the one-way voyage from San Francisco was nineteen days, and more often the contrary winds lengthened the trip into twenty-five, thirty, forty, or even sixty days. Steamers, on the other hand, could make the passage around to the river and back again in from twenty to thirty days. The first steamship to venture to the mouth of the Colorado was the 1,433-ton *Uncle Sam* bringing troops from San Francisco to garrison Fort Mohave in 1859.[7] Before that, no ship of over two hundred tons burden had attempted to navigate the Gulf to its head, but after the *Uncle Sam* proved steam navigation possible to the Colorado, the steamship *Santa Cruz* in the same year made a trip to the river.[8] In 1866 the California, Oregon and Mexican Steamship

[6] The sailings and arrivals of the vessels in the Colorado River trade are found in the daily *Alta California*, 1852-1877. In 1855 about seven vessels sailed from San Francisco for the Colorado; by 1858 the number had increased to twelve, by 1866 to approximately two a month. For the most part the sailing vessels met with few disasters. Two of which there is a record were the loss of the schooner *Arno* at the mouth of the river because of the violence of the breakers in 1859 and of the barque *E. A. Rawlins* in the same place in 1862.

[7] Los Angeles *Star*, 26 March 1859. The *Uncle Sam* was built in New York in 1852 and was lost in 1876.

[8] Los Angeles *Star*, 2 April 1859.

Company, which controlled the trade of the Gulf of California, advertised its line to the mouth of the Colorado River and the sailing of the steamship *Oregon* for Port Isabel where it would connect with the Colorado Steam Navigation Company's steamboats for Fort Yuma, La Paz, and mines on the river. The *Oregon* made at least three trips to the Colorado that year transporting soldiers and civilians to and from the Territory.[9]

Finally in 1871 Captain George A. Johnson of the Colorado Steam Navigation Company decided he needed faster freight and passenger service to connect regularly with his boats on the river, so that year he bought the *Newbern*, a 943-ton steamship, and dispatched her once a month from San Francisco. Two years later trade to Arizona was growing so rapidly that Johnson purchased the 1,000-ton *Montana*[10] from the Pacific Mail Steamship Company and at the same time added to his company's business by acquiring the rights to the Mexican and Gulf trade.[11] Now each of the steamships sailed regularly every twenty days from San Francisco, and the Colorado Steam Navigation Company guaranteed freight delivery at Yuma twelve days out from the Golden Gate. Merchants in the isolated frontier towns of Arizona began to receive 'ladies's and gent's boots and shoes, dry goods, clothing, etc., direct from New York' in record time.

The new steamship line to the Colorado furnished 'superior' passenger accommodations for $90.00 cabin fare and $40.00 steerage, but the passengers did not always agree with the company's claim. One of these was Mrs. Summerhayes who sailed from San Francisco on the *Newbern* with her army officer husband and other army men and their wives in the summer of 1874.[12] The *Newbern* turned out to be a good roller, and the August weather was insufferably hot. The sun blistered the women in

[9] Daily *Alta California*, 18 February, 13 May, 7 June 1866. In October 1869 the steamship *Continental* made a trip to the river carrying 300 soldiers. *Alta California*, 24 October 1869.

[10] Burrell P. Taylor, *How to Get Rich in California* (Philadelphia, 1876), p. 104. The *Montana*, known as the 'little' *Montana* of the Pacific Mail Steamship Company, was built at Bath, Maine, in 1856 and was a 1,004-ton wood-screw propeller valued at $75,000. She burned near Guaymas in December 1876 without loss of life but with total loss of vessel and cargo. The *Idaho* replaced her but made only one trip in February 1877 before the end of steamboating below Yuma. The *Newbern* was built at Brooklyn, New York, in 1852 and ran between San Francisco and the Colorado from 1871-1877. In 1878 she had new boilers and engines installed and was to run between San Francisco and Guaymas and Mazatlan.

[11] Yuma *Arizona Sentinel*, 27 September 1873. The *Sentinel* also reported that there was a rumor the Colorado Steam Navigation Company was planning to buy the Pacific Mail Steamship Company's coastwise steamers, the *Mohongo*, *Orizaba*, *Senator*, and *Gipsy*, and thus acquire the whole coast business of the P. M. S. S. Co. from San Francisco to Guaymas.

[12] Martha Summerhayes, *Vanished Arizona; Recollections of the Army Life of a New England Woman* (Salem, Massachusetts, 1911). This book is one of the best accounts of life in Arizona during the 1870's.

spite of an awning over the deck, and the privates had to lug mattresses up onto the deck at night so the officers and their wives could escape from the suffocating heat of the cabins. The passengers ate tough beef taken on at Cape San Lucas, baked sweet potatoes, bread, butter that poured like oil, heavily sweetened condensed milk, and coffee. At Mazatlan and Guaymas natives came alongside the ship in their small boats bringing coconuts, bananas, and limes to relieve the tedious fare. Some of the more adventurous travelers scrambled ashore to try to locate a palatable meal and incidentally to seek coolness in the picturesque towns. All felt cheered when they sighted the diamond shaped beacon at the head of the Gulf; the *Newbern* was at last approaching Port Isabel. But as far as surcease from the heat was concerned, it was like stepping from the outer regions into the seventh circle of Hell.

Several miles up a slough which branched off the east bank of the Colorado at the head of the Gulf lay Port Isabel in the shimmering, tropical heat that reflected brilliantly from the metallic sands of the river's mouth. Here in the early 1860's Captain Johnson diked off about fifteen acres of marsh land covered with salt grass and arrowweed, and built blacksmith, machine and carpenter shops, and dry docks.[13] Workmen sweltered there during most of the year, cussed the hurricanes that swept in from the Gulf, and amused themselves fishing, hunting curlews, turkeys, cranes and turtles, telling tall tales, and pitching quoits. Port Isabel was not really a port, for the actual transfer of freight was made in the Gulf at the mouth of the slough. Rather Port Isabel was the shipyard of the Colorado Steam Navigation Company; there steamboats were built and repaired, and there the small, flat-bottomed craft took refuge from the tidal bore and hurricanes while waiting for the steamships and sailing vessels. Arizona's ambition was to have a port on the Gulf of California, and the fire-eaters of the Territory were willing to revive the Mexican War because Gadsden had not included a harbor on the Sonoran coast in his purchase.[14] The roads were hard and good from the ports on the Gulf to Tuscon, but the Mexican Government levied ruinously high customs duties, and goods of value landed at Guaymas or Port Libertad sometimes had a habit of disappearing. The Treaty of Guadalupe Hildalgo and the Gadsden Purchase Treaty did, however, give the vessels and citizens of

[13] Charles Granville Johnson, *The Territory of Arizona*; . . . (San Francisco, 1869), pp. 6-7. The port was named Port Isabel because the first vessel to venture up the slough was the schooner *Isabel*, Captain William H. Pierson.

[14] There are many discussions of the need of a port for Arizona on the Gulf of California. See Sylvester Mowry, *Memoir of the Proposed Territory of Arizona* (1857), pp. 19-20; Richard C. McCormick, *Arizona; Its Resources and Prospects* (New York, 1865), p. 6; Yuma *Arizona Sentinel*, 16 March 1889.

the United States right of passage up the Gulf of California and the Colorado River.[15] So the shippers avoided customs duties by having the ocean-going vessels drop anchor off the Port of Isabel slough in mid-stream alongside the waiting steamboats and barges, which took on the freight while the passengers moved to the staterooms of the river boats.

During the fifty years of steamboating on the Colorado, the river boasted a total fleet of sixteen steam driven boats and at least ten barges. The first steamboat to challenge the swift current of the Colorado, the *Uncle Sam*, was launched in December 1852 near the mouth of the river after being assembled there from parts brought from San Francisco on the schooner *Capacity*.[16] The *Uncle Sam* was in reality only a steam tug. She was a 65-foot side-wheeler with a 14-foot beam and a 20-horse power engine, and drew about two and a half feet of water when loaded with thirty-five tons. Her owner and captain, James Turnbull, obtained the contract from the Army to supply Fort Yuma while Johnson was struggling with his flat boat. Apparently the *Uncle Sam* made a few trips to the fort from the sailing vessels anchored in the river, but she was not large or powerful enough, and when she sank near Fort Yuma in July 1853, the contract was again given to Captain George A. Johnson. On 6 October 1853 the brig *General Viel* sailed from San Francisco for the Colorado evidently carrying the parts of George A. Johnson and Company's steamboat *General Jessup*, which began running on the river in January 1854.[17] She also was a side-wheeler, 108 feet long with a 28-foot beam; her capacity was sixty tons, and she drew two and a half feet of water. The *General Jessup* proved successful and was the first steamboat to reach the practical head of navigation on the Colorado, about three hundred and fifty miles above Fort Yuma, but she was the last side-wheeler on the river.[18] Johnson's next boat, the *Colorado*, which he put in service in 1855, was a 120-foot stern-wheeler with powerful engines and a sharp hull.

With both the *General Jessup* and the *Colorado* in operation, Johnson and Company was well established, and in 1859 built the *Cocopah*, a 140-

[15] *Treaty of Guadalupe Hidalgo*, 1848, Article VI; *Gadsden Purchase Treaty*, 1853, Article IV.

[16] Daily *Alta California*, 30 November, 21 and 31 December 1852. There were a number of steamboats being built by this time in San Francisco for the California rivers.

[17] The main sources for information on the early steamboats are items from the *Alta California* and Los Angeles *Star*; George A. Johnson, *Life of George A. Johnson* [manuscript], and 'The Steamer General Jessup,' *Quarterly of the Society of California Pioneers*, IX (1932), 108-113; Frederick S. Dellenbaugh, *The Romance of the Colorado River* (New York, 1909), James H. McClintock, *Arizona; . . .* (Chicago, 1916), H. H. Bancroft, *History of Arizona and New Mexico* (San Francisco, 1889) and *Chronicles of the Builders* (San Francisco, 1891), Vol. V.

[18] Johnson was the first to explore the Colorado above Yuma by steamboat, but Lieutenant Joseph C. Ives also did so in the same year, using a little 54-foot iron steamboat, the *Explorer*. Joseph C. Ives, *Report upon the Colorado River of the West, explored in* 1857 *and* 1858. 36th Cong., 1st Sess., *House Ex. Doc.* 90.

foot stern-wheeler, which probably replaced the *Jessup*.[19] In 1862 Johnson dismantled the *Colorado* and put her machinery in the new 145-foot *Colorado (II)*. During the following year he built the *Mohave*, 135 feet long with a 30-foot beam. But even three boats were not enough to handle the freight arriving in the Sixties. Not only were there more soldiers stationed in Arizona and in California along the Colorado River to keep the Territory of New Mexico and the State of California from falling into the hands of the Confederacy, but also gold was discovered near the Colorado in 1862. Miners from California, Nevada, and Sonora rushed to the new fields of Arizona, and towns sprang up over night on the banks of the river. By 1864 trade on the Colorado had increased so much that San Francisco merchants were encouraging steamboat operators to compete with Johnson's company, which was incorporated in that year at Sacramento as the Colorado Steam Navigation Company with a capital stock of $500,000.[20] In an attempt to break Johnson's monopoly, Captain Thomas E. Trueworthy in 1864 steamed the *Esmeralda*, a 130-foot stern-wheeler, from San Francisco around to the Colorado and put her in operation between the river's mouth and Callville.[21] The *Nina Tilden* was brought around from San Francisco under her own power in the same year by Captain Paddy Gorman for the Philadelphia Mining Company, which worked copper mines along the Colorado.[22] Johnson meanwhile built the *Cocopah (II)* to replace the decrepit *Cocopah (I)*, and in 1867 he had the pleasure of buying both the *Esmeralda* and the *Nina Tilden*. The Colorado Steam Navigation Company had no more competition on the river.

In the Seventies six boats and five barges of the C. S. N. line chugged up and down the lower Colorado between the Gulf and El Dorado Canyon, five hundred and forty miles above Port Isabel. The *Colorado (II)*, the *Cocopah (II)*, the *Mohave*, and the *Nina Tilden* were still in service; the 160-foot *Gila* was added in 1872, and in 1876 the *Mohave (II)*, the queen of the

[19] In 1858 on her return trip from the head of navigation the *General Jessup* ran on a stone about eighteen miles above Yuma and sank. Her boiler had exploded in 1854 killing one crew member, and the *Jessup* was the only steamboat to have a boiler explosion or to sink on the Colorado. After her accident in 1858 there is no further reference to her. Her hull was floated into Minturn slough and her machinery sent to San Francisco.

[20] Captain Samuel Adams in his report of his exploration of the Colorado and its tributaries published as *House Mis. Doc.* 37, 42d. Cong. 1st Sess., charges the Colorado Steam Navigation Co. with being a branch of powerful Combination Navigation Company of California.

[21] See James H. McClintock, *Mormon Settlement in Arizona* (Phoenix, 1921), pp. 110-116 for the history of Callville. The settlement was founded in 1864 to receive goods shipped from San Francisco to Salt Lake by the way of the Colorado, less expensive than overland freighting from the East or from California. With the completion of the Central Pacific in 1869 Callville was abandoned.

[22] In June 1865 Captain Trueworthy and the Philadelphia Mining Company formed the Pacific and Colorado Steam Navigation Company. H. H. Bancroft, *Chronicles of the Builders*, V, 156. This company operated the *Nina Tilden* and *Esmeralda*, one of their main interests being the Utah trade which came to nothing because of the Central Pacific Railroad.

river, 170 feet long with a 33-foot beam, took the place of the *Mohave (I)*.[23] In general design, shape, and construction the later Colorado steamboats were similar to the boats on the upper Mississippi, the Ohio, the Sacramento, or the Columbia, and were very like the boats on the uncertain Missouri in that they drew practically no water light and rarely more than two feet when loaded. It was a common legend that a Missouri steamboat could float on a cupful of dew, and J. Ross Browne remarked of the Colorado one dry season that boats could seldom sink in it since it could scarcely fall any lower without going entirely through its own bottom.[24] In fact Browne went so far as to suggest that the Delegate from Arizona would insure himself of a life-long job if he could prevail upon Congress to procure rain by joint resolution or grant half a million dollars to plug up or caulk the bottom of the river so it would not leak. When the leadsman called 'scant four' on the Colorado, the pilot did not snatch the boat back, reverse engines, pull bells, and shout down the tube at the engineer. He merely wiped his brow and reflected that the river must be rising. Four feet was plenty of water in most of the channel; five feet was practically no bottom.[25] So the light draught of the Colorado boats — eighteen inches to two feet — was one of the necessary concessions to environment.

The superstructures of the Colorado River boats were in keeping with their size; no elegant floating palaces graced the Colorado. Usually the boiler deck was enclosed only enough to house the engine and provide quarters for the Indian and Mexican crew; the boilers were left exposed, and any steerage passengers bunked where they could. On top of the boiler deck was the cabin deck, enclosed forward with staterooms amidships, but with the stern left open sided so the passengers could sit in the deck shade and take advantage of any desert breeze. The boats were not decorated elaborately and were furnished only with essential equipment. Passenger traffic on the Colorado was never heavy; the main business of

[23] The *Mohave (I)* was taken to Port Isabel for the last time 29 May 1874. Her machinery was sent to San Francisco and put aboard the steamboat *Onward* and her hull was hauled out at Port Isbael at right angles to the *Cocopah*. The *Cocopah* had been taken out of service about 1865, her machinery sent to San Francisco and put aboard the *Hattie Fickett*, and her hull hauled out at Port Isabel and a warehouse built on it. The hull of the *Colorado (I)* had also been stranded at Port Isabel. There is no record of the *Esmeralda*. The *Nina Tilden*, moored at Port Isabel leaking badly in 1874, turned over during a big tide, and had to be chopped up to clear the slough. Yuma *Arizona Sentinel*, 28 September 1878.

[24] J. Ross Browne, *Adventures in the Apache Country* (New York, 1871), p. 57.

[25] At its mouth, of course, the Colorado was from one to three fathoms deep, and during high water there was eight feet or more of water in much of the channel above, but on the other hand, there was often only two feet or less of water over the bars.

the steamboats was the hauling of freight.[26] On top of the cabin deck perched the pilot house with its wide windows, and aft of that was a small texas where an excitable Chinese cook served passengers simple meals of salt beef, biscuits, canned vegetables, and pie.[27] Behind the texas rose a tall single stack; only on the *Mohave (II)* was the pilot house behind twin funnels as on the Mississippi packets. The *Mohave*, however, was the particularly elaborate craft of the line. She really was a four-decker forward, since the pilot house was on top of the texas. Her tall jackstaff rose high at the bow, and her stacks climbed nearly forty-five feet above the river. Amidships and aft rose other staffs; on state occasions they were decked with flags, and the white boat was draped with green garlands, which hung in festoons from the trusses and decks, and spiraled up around the staffs.[28]

After leaving the mouth of the river the steamboat, usually with one and sometimes with two barges in tow, paddled upstream with the flood tide of the Californian Gulf for forty or fifty miles. Colorado steamboat captains had learned to avoid low water by starting up river when the tides of the Gulf were coming in. They had also learned not to start up in the full or new moon, for then the waters of the Gulf break furiously over the down rushing red torrent of the river, and the two clash with a roar that shakes the innards of the earth.[29] About fifty miles above Port Isabel the boat paused to wood up at the first wood yard. Up to this point there were no trees and few signs of human life, for usually even the Indians avoided the mouth of the river. On either side of the lower reaches of the Colorado back toward the distant blue mountains stretched mud flats covered with the dead drift-wood carried down hundreds of miles by the mighty river. In the spring, arrowweed, salt grass, wild hemp, and wild cane sprang up on the flats and relieved the barrenness, but during the summer the hot air hung in a shimmering curtain over the delta, and the piles of drift-wood took on the fantastic shapes of the imagination.[30]

Traveling on the Colorado during the cooler months could be pleasant, but in summer a steamboat could be hell afloat. Everything from

[26] The boats carried few passengers until the mining rush of 1862-1863. Passengers were usually miners or Army men.

[27] Martha Summerhayes, *Vanished Arizona*, p. 49.

[28] The boats lying at Yuma at the foot of Main Street were always decorated on holidays or special occasions.

[29] The 'bore' is described by Lieut. R. W. Hardy in his *Travels in the Interior of Mexico*, p. 329, and by Lieut. J. C. Ives, *Report upon the Colorado of the West*, p. 28.

[30] There is an excellent description of the mouth of the Colorado by Will C. Moore in the *Arizona Weekly Enterprise*, 13 July 1893, reprinted from the *Arizona Magazine*. He also describes the 'bore.'

chairs to silverware seemed to be slowly igniting, and the thermometer often registered over one hundred and ten degrees in the shade. Even profanity failed to express the feelings of the passenger — all he could do was sit and suffer. Night was even worse, for the slight breeze generated by movement was lost when the steamboat tied up at the bank to wait for the dawn; a pilot would have had to be psychic to make a night run on the shifting channel of the Colorado. The main channel changed its course so often that the pilot knew it was not to be found by following the course of his last run.[31] So in the summer the passengers retired without enthusiasm to their hot staterooms as soon as the boat slowed to a stop — the cabin was preferable to the man-eating mosquitos outside. Only one man remained exposed to their ravages — the watchman. He wore close fitting canvas trousers and jacket, fisherman's boots, a wire helmet and casque covered with fine gauze, and buskskin gauntlets. In the sole of each boot was a hole plugged with a cork. When the inside man felt that his boots were about full of perspiration, he pulled the corks.[32]

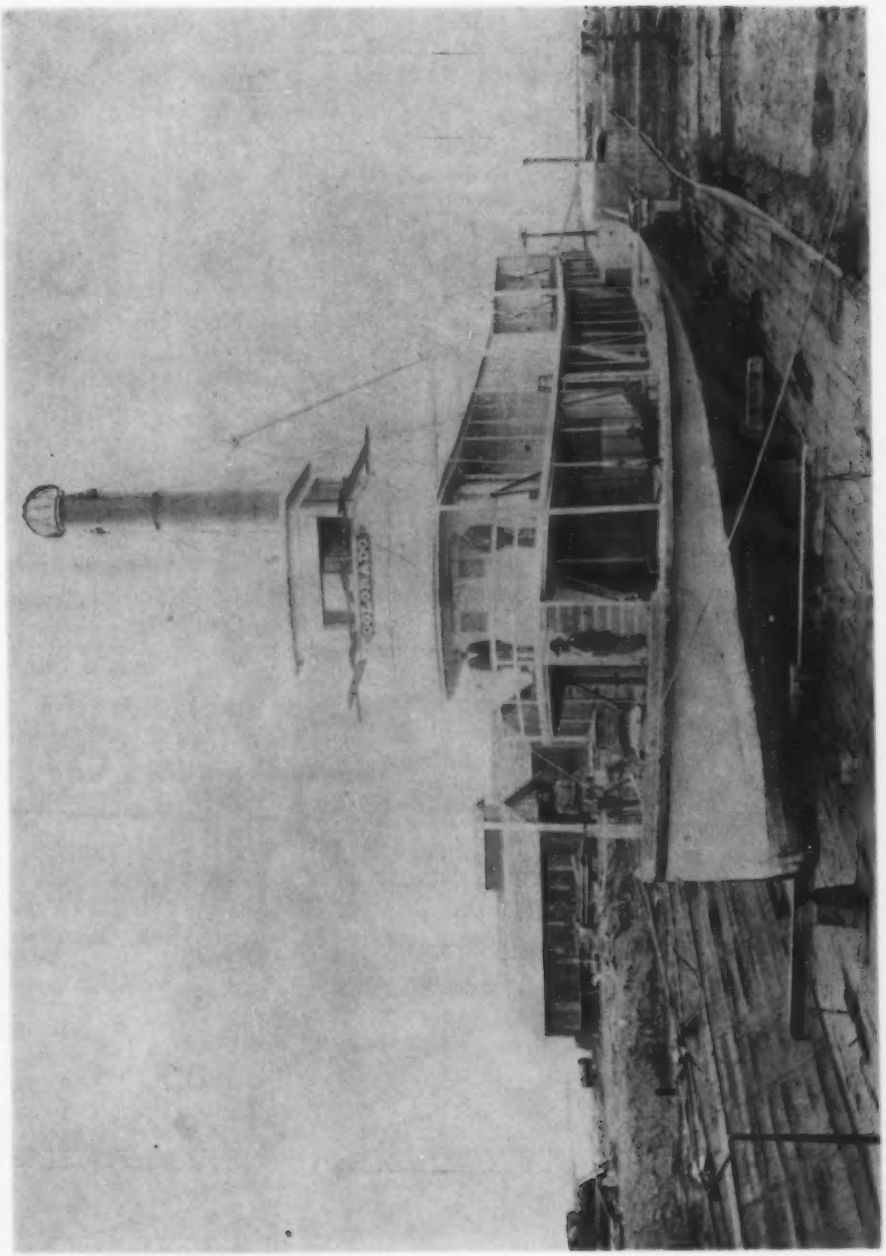
For three or four days the steamboat creaked around the endless bends of the snake-like channel and dodged the yellow sand bars that grew up in the river over night. It was only ninety miles to Yuma by land, but the river covered one hundred and seventy-five miles in its meanderings from Yuma to the Gulf. One passenger wrote after making the trip from Port Isabel that at one time they were within eight miles of Yuma by land, but after traveling sixty miles by steamer they found themselves the next morning twenty-five miles from Yuma.[33] On the second day of the up-stream trip the character of the country changed. The banks of the river became higher, and willows, cottonwoods, mesquite trees, tall reeds, and cactus lent greenness and variety to the landscape. Cocopahs squatted around their tule huts that clustered in groups on the river bank. At intervals the boat paused at the wood yards, run by the Indians for the steamboat company, which paid them $2.50 a cord. About halfway to Yuma the boat passed Lerdo Colony, where Americans and Mexicans settled in 1874 and were trying to cultivate the wild hemp and cane of the delta and grow other semi-tropical products.[34] Only Lerdo, a few ranches, and the wood yards broke the wilderness below Yuma.

[31] J. Ross Browne, *Adventures in the Apache Country*, p. 57. Also Lieut. A. H. Payson, 'Examination and Survey of the Colorado of the West from Fort Yuma to El Dorado Canyon,' *Annual Report of Engineers*, 1879, p. 1778.

[32] Yuma *Arizona Sentinel*, 25 July 1874.

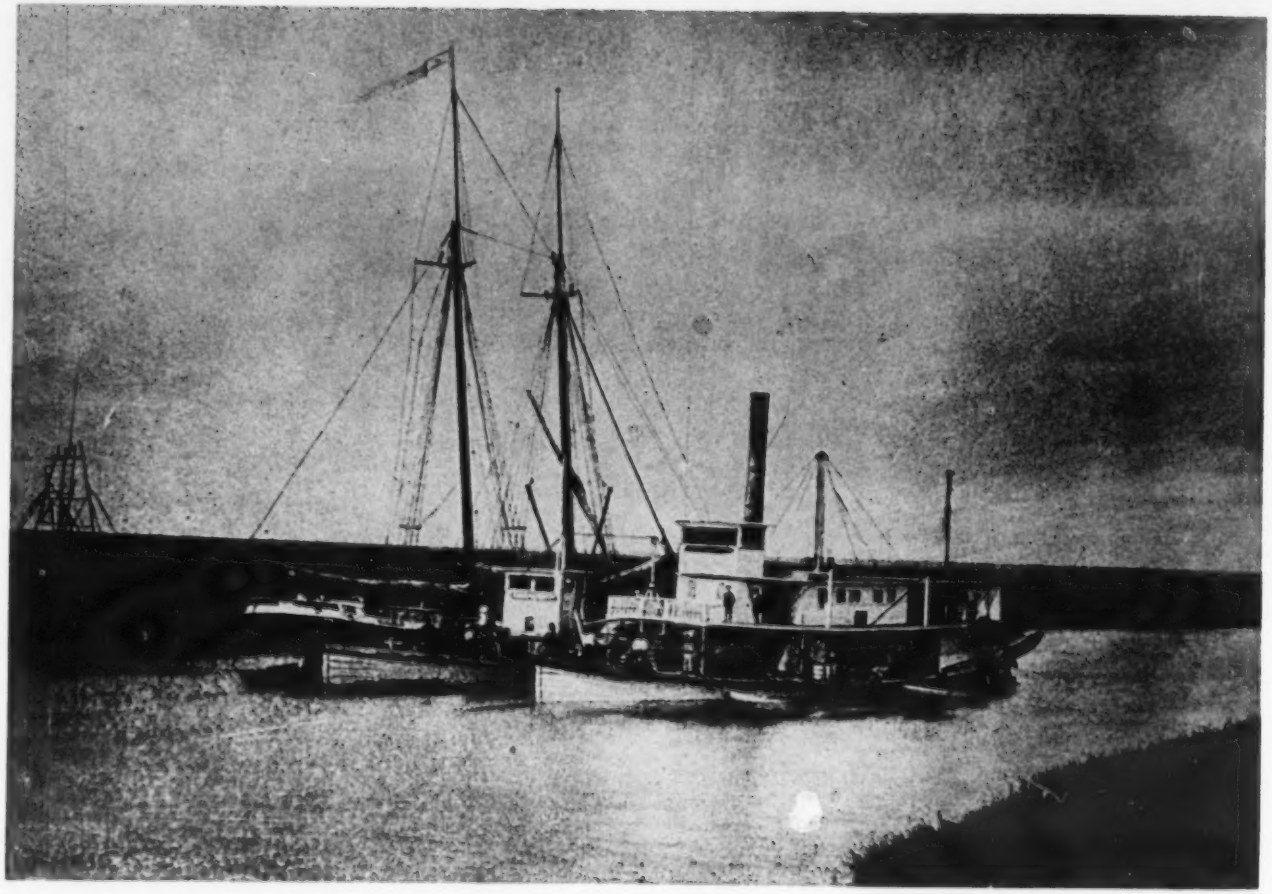
[33] *Alta California*, 27 June 1866.

[34] Thomas Blythe put money into the Lerdo project, which was also encouraged by Governor Andrade of Sonora and the Mexican Government. The colony grew during the Seventies and Eighties, but by 1893 it had been abandoned.



*Colorado* (II), 1862, in the dry dock of the Colorado Steam Navigation Co. at Port Isabel

*Reproduced from a photograph in Charles G. Johnson,* The Territory of Arizona *(San Francisco, 1869), Bancroft Library*



Schooner *Isabel* discharging cargo into a barge and a river steamer at Port Isabel

*Reproduced from a photograph in Charles G. Johnson,* The Territory of Arizona *(San Francisco, 1869), Bancroft Library*

When the steamboat finally rounded the last bend and nosed into the landing at Yuma it passed from the solitude of the lower river into the bustling activity of the steamboat metropolis of Arizona. To the traveler, the name Arizona City, as Yuma was then called, perhaps seemed too dignified for the town. Adobe buildings, for the most part only one story high, fronted on a few wide dusty streets. Almost all of the houses were adobe too, and around their unkempt treeless yards straggled irregular picket fences of cottonwood and ocotillo. Indians ran through the streets clad only in G-strings, men of all colors lounged in front of the stores, and shooting scrapes were not uncommon. Of the fifteen hundred people living in the town only about five hundred were white American. Yuma with its mixed population of all degrees of color and nationality was typically frontier, heightened because the frontier of the United States here lay in the old Spanish borderlands. The traveler in Arizona City heard tales of Apache raids on settlers, stage coaches and freight wagons, read of gunplay and murders and lynchings of outlaws, and saw at night the camp fires of the Yumas burning on the edge of the town. Across the river on the high bluffs of the California bank on the former site of the ill-fated Franciscan mission were the adobe buildings of Fort Yuma; and soldiers were still needed in the Seventies to protect the Territory from the Apaches. Yet in spite of the unfavorable conditions of settlement and the small population of the young Territory, there was much freighting business because of the mining boom and the needs of the Army, and not a few fortunes were made by wholesale merchants and steamboat men during the Sixties and Seventies.[35]

With the cry of 'Steamboat coming!' Yuma sprang into activity, for the arrival of a boat was a festive occasion. Boys and loafers ran down to the landing at the foot of Main Street to enjoy any possible excitement; the peanut merchant, the apple boy, and the tamales vendor hawked their wares; Americans, Mexicans, and Indians rushed noisily about loading and unloading the steamboat, the barges, and the 'prairie schooners' drawn up alongside the steamboat warehouse.[36] These huge high freighting wagons with white canvas tops, drawn by cynical mules or patient oxen, lumbered in from Tucson and all Southern Arizona, stirred up the dust of Yuma and crowded the streets and the steamboat landing. Their loads of ore, wool, and hides were piled on the landing and the waiting merchandise stowed into them for the return trip. Thus all the raw pro-

Schooner *Isabel* discharging cargo into a barge and a river steamer at Port Isabel
*Reproduced from a photograph in Charles G. Johnson, The Territory of Arizona (San Francisco, 1869). Bancroft Library*

[35] Yuma *Arizona Sentinel*, 25 August 1877; 1 September 1877.

[36] A good description of the scene at the steamboat landing is found in the Yuma *Arizona Sentinel*, 10 April 1875.

ducts of the Territory from up river or the interior passed through Yuma to Port Isabel; through Yuma, too, went the incoming freight to the stage stations along the Gila River, to Phoenix and the farms of the Salt River Valley, to Florence and Tucson, and to the soldiers at Fort McDowell and Fort Lowell. Other freight was trans-shipped from Yuma on up the Colorado by steamboat to the river towns of Ehrenberg, Mohave City, and Hardyville, and from each of those towns more freight wagons pulled out toward the interior settlements of Northern Arizona — to Prescott, Wickenburg, Mineral City, Cerbat, and to Fort Whipple.

The steamboats facilitated the growth and development of Arizona Territory, although the amount of freight they handled was small compared to the tonnage shipped on other rivers.[37] Tucson, then the largest town in the Territory, came more and more to depend upon the Colorado as its avenue of commerce, as did the newly settled Phoenix.[38] All kinds of goods filled the long trains of swaying wagons that plodded up the valley of the Gila — goods that ranged from mining and farming machinery to oysters for the epicures who dined at the Shoo-fly Restaurant in Tucson. There over wines from San Francisco, oysters from Guaymas, and cigars from Havana, the frontier *literati* bandied Latin and French and German quips and quoted affectionately from Virgil and Mark Twain. Or the same group might, and undoubtedly did, adjourn to the Congress Saloon for whiskey or brandy and admire themselves in the great mirror back of the bar, a mirror five feet tall and nearly nine feet long, brought up the Colorado by boat and then hauled carefully overland in Zechendorff's freight wagons. Or in the Governor's mansion they could enjoy elegant furniture and thick rugs, brought in at a dollar a pound, freight collect.[39]

The heavily laden wagons required at least thirty days for the round trip between Tucson and the river; and the coming of the dusty train of ten or fifteen wagons was always a much anticipated event. Everyone was eager to inspect their loads of clothing, dry goods, groceries, liquors, tobacco, hardware, drugs, and books and magazines. One day in 1869 the Tucson *Citizen* announced:[40]

[37] The amount of freight brought to Yuma in 1875 was over 4,500 tons. The amount of freight shipped from Yuma was about 10,000 tons: mineral ores, 1,000 tons, wool, 60 tons, hides, 6,170 tons, pelts, 1,400 tons, way freight, 1,440. Hiram C. Hodge, *Arizona As It Is* (Boston, 1877), p. 209.

[38] Much freight was brought in from the East by way of the Santa Fé trail to Tucson. Phoenix was founded in 1869.

[39] Interesting accounts of life in Tucson are found in John G. Bourke's *On the Border with Crook* (New York, 1888), and Frank C. Lockwood and Donald W. Page, *Tucson — the Old Pueblo* (Phoenix, 1930).

[40] Tucson *Weekly Arizonan*, 16 October 1869.

Mr. Zechendorff's train arrived on Sunday; thirteen wagons laden with a complete assortment of every known thing in frontier life, and a great many things never heard of in these remote districts. Fancy, for instance, the hootings of a velocipedestrian, dressed after the latest New York fashions, echoed back from the Picacho, or ringing along the valley of the Santa Cruz; and this is but one of the novelties with which Zechendorff has been pleased to disturb the equanimity of his fellow-frontiersmen. To see the others he invites you to drop in at his curiosity shop.

The Tucson wholesale firms of Zechendorff, E. N. Fish, and Lord and Williams all prospered during the late Sixties and the Seventies, and one of the reasons was the flourishing contraband trade with Sonora. It was cheaper for the Sonorans to ship drygoods from San Francisco by way of the Colorado, Yuma, and Tucson than to land them at Guaymas where the rapacious Mexican customs officials levied their tolls. So Mexican pack mule trains secretly crossed into Arizona over narrow mountain trails and smuggled into Tucson olives, oranges, lemons, tobacco, flour, and Mexican silver pesos to exchange for the much desired bales of drygoods.[41] The smuggling business was not only profitable to all concerned but also reasonably safe as long as the smugglers could keep from being scalped by the Apaches or shot by the American and Mexican cattle rustling outlaws who liked silver dollars.

Steamboats, however, meant more than commercial life to Arizona; they played an important part in the social life of the people, particularly at Yuma. To most Arizonans of the 1870's, isolated as they were, a steamboat trip was the height of excitement and luxury. Especially enjoyed was the traditional May Day excursion; all the school children of Yuma, dressed in their Sunday best, and many of the grown-ups crowded onto a gaily decorated steamboat which carried them at the expense of the Company to some favorite picnic spot along the river. In the summer all those who were able to leave the Territory sailed to San Francisco to escape the heat. One bride and groom spent their honeymoon on a steamboat traveling to the mouth of the river and back again to Yuma. Other people wanted to see the canyons upstream, while some had to travel from Yuma to the upriver or northern interior towns whether they wanted a steamboat ride or not. In fact, living up the river or having business there were the only reasons for patronizing the boats except possibly for the pleasure of the ride or the experience of viewing a first-hand life in a frontier territory. Only adobe hamlets, mining camps, and army posts lay at the end

[41] Yuma *Arizona Sentinel*, 22 September 1877; Will H. Robinson, *The Story of Arizona* (Phoenix, 1919), p. 121.

of the journey. If the traveler were bound for Prescott or Fort Whipple, he had waiting for him after the river trip a jolting one hundred and sixty-five mile ride in a springless wagon with the constant danger of getting a tomahawk in his skull.

Since the population of Arizona Territory was small,[42] the steamboats did not carry a large number of passengers; an army officer investigating the extent of navigation of the Colorado found that the boats from May 1877 to January 1879 carried 2,286 passengers to and from Yuma and points on the river above.[43] Yet the steamboats provided a needed and appreciated service, for the towns along the river could be reached from Yuma otherwise only by horseback. Almost everyone of importance in the Territory traveled at one time or another on the boats. The District Judge sailed at regular intervals with his wife and the leading barristers of Yuma to hold court at Mohave City. Army officers, among them the famous General Crook, and their wives often graced the steamboat decks. Governor McCormick campaigning for the office of Delegate of the Territory traveled on a flag covered steamboat from Yuma to Mohave City and back so he could speak to the miners along the river and the few hundred people in the river towns.[44] Politicians, eastern capitalists, dirt miners, authors in search of frontier material, and bad men, such as Wyatt Earp, mingled on the Colorado boats.

Steamboating up the Colorado was a pleasant experience if the thermometer did not read over one hundred degrees and the passenger was not in a hurry. But cool weather and a fast passage never occurred at the same time, for the river was low in the winter. The regular steamboat schedule during high water called for eight to fifteen days for the six hundred mile round trip between Yuma and Mohave City, including stops to tie up at night, to take on wood, freight and passengers, and to unload freight and put passengers ashore at the various landings and ranches. Sometimes, however, the trip became interminably long, and the more adventuresome passengers got off and walked across country, meeting the boat at a wood yard further upriver, or begged the Captain for the use of the skiff carried on the steamboat and passed the time hunting wild fowl.[45]

[42] The population of the Territory of Arizona in 1870 was about 11,000 according to the *Census Report* for that year.

[43] Lieut. A. H. Payson, 'Examination and Survey of the Colorado of the West,' *Annual Report of Engineers*, 1879, p. 1779. There were more passengers carried when the steamboats also ran between Yuma and Port Isabel, but there seem to be no figures on the amount of passenger traffic available for those years.

[44] *Alta California*, 30 May 1868.

[45] John Alexander Rockfellow, *Log of an Arizona Trail Blazer* (Tucson, 1933), pp. 2-5.

But usually the boats operated more or less on schedule – that is, they made each trip as fast as they could. And there were some fast trips made by the Colorado steamboats, particularly downstream, and a fast downstream trip required great skill on the part of the pilot, for the river was crooked and swift and the channel narrow and full of bars. In the canyons above Ehrenberg the course was lined with rocks, and the twisting of the river narrowed the view ahead at times to less than one hundred yards. Yet in June of 1878 the *Cocopah* left Aubrey at the mouth of Bill Williams' Fork at 4 A.M. and arrived at Yuma at 5:30 P.M., covering the two hundred and twenty miles in eleven and one-half hours and making five landings.[46] A downstream speed of twenty miles an hour tested the skill of the pilot in handling his boat. Compared with the Mississippi packets, the Colorado boats did not have very good records for speed on the upstream run. One of the fastest trips between Yuma and Mohave City, for instance, was made in August 1873 by the *Mohave*, when with a barge in tow she took sixty hours including stops to travel the three hundred miles.[47]

At the crack of dawn the upriver boat, crammed with tons of freight and towing a loaded barge, steamed away from the Yuma landing. The barges could carry up to five hundred tons of freight and were manned by their own crews since they dropped downstream alone.[48] The first stop, thirty-five miles above Yuma on the California side of the river, was Castle Dome, which boasted a population of fifty, and a general store and post office run by the owners of the smelting furnace and mines. Freight was unloaded at the landing for the mines fifteen miles back from the river, and much ore was shipped from there all during the Seventies. About the morning of the second day out, the steamboat nosed into the Ehrenberg landing, one hundred and twenty-five miles above Yuma on the east bank of the river. Mrs. Summerhayes[49] upon hearing the name of Ehrenberg on her upriver voyage had visions of castles on the Rhine, which only heightened her disillusionment when she saw low adobe thatched huts squatting along hot, sandy streets and a few miserable looking stores with Indians and Mexicans loafing in front of them.[50] Yet Ehrenberg with its population of three hundred was an important freighting

[46] Yuma *Arizona Sentinel*, 8 June 1878.

[47] Yuma *Arizona Sentinel*, 30 August 1873.

[48] The barges ranged in length from about 130 to 165 feet. Barge No. 4 or *Yuma*, built in 1872, was 165 feet long, 33 feet broad, 3 7/10 feet deep, and measured 185 17/100 tons.

[49] Martha Summerhayes, *Vanished Arizona*, p. 54.

[50] Ehrenberg is described in the Yuma *Arizona Sentinel*, 6 September 1873.

center for the mines and towns of northern Arizona; in fact the four merchants of the town shipped in so much freight that usually special boats were dispatched there. Other boats went directly from Yuma to Mohave City and Hardyville, though often they too stopped at Ehrenberg.

Above Ehrenberg the steamboat passed the Colorado Indian Reservation, where a few hundred Indians under the direction of an Agent cultivated the bottom land for many miles along the river. The settlement of Blythe was started in 1878 on the California bank opposite the Indian Reservation. At the mouth of Bill Williams' Fork was Aubrey Landing, a name which dignified a small collection of huts and sheds in which freight was stored for the rich Planet and McCrackin mines that lay several miles back from the river. Apparently there was also a general store, a post office and a saloon for the convenience of the miners. This was all that was left of a thriving settlement ruined by the break in the copper market in 1865.[51] Between Aubrey and Mohave City there were only a few farms in the Chemehuevis Valley and the Mohave Valley, but the scenery made up for the lack of civilization. The steamer clattered and puffed through multi-colored Mohave Canyon with its unusual rock formations, among them the Needles.

Finally in from eight to fifteen days out from Yuma the boat, to the relief of the passengers, tied up at Mohave City after traveling three hundred miles. Mohave City served as a post office and trading post for the mines and for Fort Mohave; the town had been laid out and built largely by the California Volunteers stationed at the fort in 1863-1864, and had a population of possibly one hundred and fifty. It lay about a mile from the fort, and both were on the Arizona bank of the river.[52] South of the fort the Mohave Indians lived on the Fort Mohave Indian Reservation and farmed the bottom lands. Business must have been good at the Mohave City store, for its owner, Paul Breon, could afford to take his San Francisco bride to Vienna on a honeymoon. Sometimes during high water the boats went on up ten miles above the fort to the small settlement of Hardyville, a trading center for the nearby mines. There was little there besides the store, quartz mill, warehouse, a few adobe shanties, and a ferry, but much freight passed from both Mohave City and Hardyville to the interior towns of Cerbat, Mineral Park, Hackberry, and Prescott.[53]

[51] Yuma *Arizona Sentinel*, 15 June 1878.

[52] Richard J. Hinton, *The Handbook to Arizona* (San Francisco, 1878), pp. 43-44.

[53] Hiram C. Hodge, *Arizona As It Is*, p. 147.

Passengers on the Colorado River boats were safe from dying except from natural causes or possibly the heat. There were no terrible boiler explosions like those that marred steamboating on the Mississippi, for there was no competition and so no racing on the Colorado. Neither was there any sinking of boats after striking a snag; there was rarely enough water to sink a boat in. With the excitements of bursting boilers and sinking boats eliminated, Colorado steamboating was not very lively. The Army provided much of the excitement of life on the river, for blue-coated soldiers were packed onto barges when they had to be moved up or down the river. It was a red-letter day at Fort Yuma and Fort Mohave when new troops arrived from California and soldiers who had been fighting Apaches for three years in the interior came to the river posts to leave the Territory. And it was an exciting time for the staring natives along the banks when a steamboat decorated with flowers and flags glided by, the Company band playing for the officers and their wives on deck, while the gladly departing regiment yelled its approval from the barge behind. The only other diversions for passengers were the minor ones of rain, meteors, or Indians peering from the brush along the bank.

Of course the trip to Mohave was usually enlivened by the running aground of the barge or the boat or both. And sometimes the rudder broke on a snag or the boiler foamed because of the thick red mud in the swirling water. But sand bars plagued upriver captains the most. The work of the captain-pilot never ceased from dawn to dark. The job required strong nerves, an iron constitution, and hawklike eyes. There were several successful river boat captains on the Colorado in the Seventies, but Captain Jack Mellon was probably the most popular. He navigated the Colorado so long and well that he became a fixture and tradition; he was one of the real characters of the river. A tall, handsome Nova Scotian, he had gone to sea at the age of nine and sailed all over the world.[54] In 1864 he shipped from San Francisco to the mouth of the Colorado and became fascinated by the strange river. There he learned to run a steamboat on a cupful of water and became noted for his fast trips and his tall tales.

Captain Mellon's skill at nursing a boat up a low river was unrivalled. The steamer would be skimming along, the pole man taking soundings and intoning 'Two, two light! Quarter less two!', when suddenly he would let out a startled 'No agua alli!' as the boat whacked solidly against a bar.

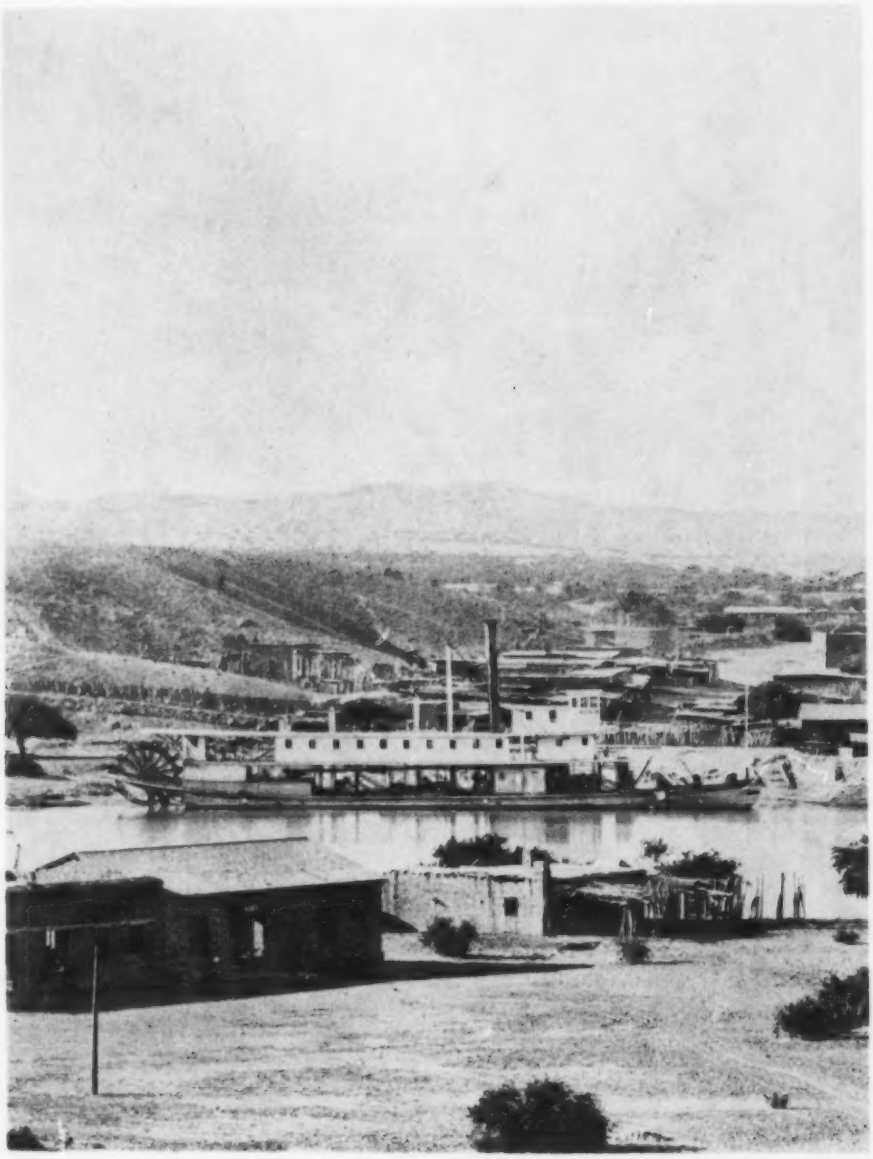
[54] In Martha Summerhayes, *Vanished Arizona*, 'Appendix,' pp. 308-312 is a letter from Captain Mellon to Mrs. Summerhayes telling of his career. Isaac Polhamus was another famous captain who was on the river as long as Mellon.

But no one except the tenderfoot traveler ever showed surprise or alarm. Sometimes one of these novices at Colorado steamboating would, under the stress of broiling in the hot sun, politely ask Mellon if he thought the boat would be gotten off that day. 'You can't tell'; Captain Mellon would gravely say 'once I lay fifty-two days on a bar.' [55] But usually there was no delay. First the Indian and Mexican crew jumped overboard and tried pushing the boat with poles while the engineer reversed the engines. If that did not work, the Captain next tried the spars or 'hoppers,' attached to the sides of the boat, together with the capstan and lines. If nothing yet happened, Mellon bellowed, 'Avast heaving! that won't do! Get the small boat, take the big anchor and four-inch line to the head of the bar!' Finally, if the boat refused to be hauled over the bar bow first, Mellon as a last resort climbed into the small boat himself, took a sounding pole and tried the water at another place. Then he jumped back on board, swung the boat around, sent out the line again, and threw enough water under the boat with the stern wheel to lift her over the bar with the help of line and capstan.[56]

Mellon was usually the captain who took the boats to El Dorado Canyon, a side canyon on the California bank of the river, fifty miles above Hardyville. The rich El Dorado Canyon mines shipped in a large part of their supplies by steamboat, but because of low water and the rapids in the canyons the boats could only make the run about five months out of the year. Even more infrequent were the trips above El Dorado Canyon, and Mellon apparently was the only captain to navigate the Colorado between El Dorado Canyon and the Virgin River. For a few years during the early Eighties he was employed by the Southwestern Mining Company of El Dorado Canyon to haul down salt from their salt mines on the Virgin. So Mellon took both the *Gila* and the *Mohave* on many runs through some of the grandest scenery on the continent, through the great canyons where a steamboat looked as out of place as it would down the shaft of a mine. The Captain said that in the narrow Black Canyon, now blocked by Boulder Dam, his boat was shaded all day from the sun by the two thousand foot perpendicular walls. From this canyon the steamboat emerged again into open country at Vegas Wash and passed the Mormon ghost town of Callville, today covered by the waters of Lake Mead. Then the boat entered Devil's Gate or Boulder Canyon. The Devil's Gate at the end of the canyon looked like a tunnel to the inexperienced, but a

[55] Martha Summerhayes, *Vanished Arizona*, pp. 52-53.

[56] Yuma *Arizona Sentinel*, 12 February 1876. Mellon is said to have orginated the method of going over bars stern first.



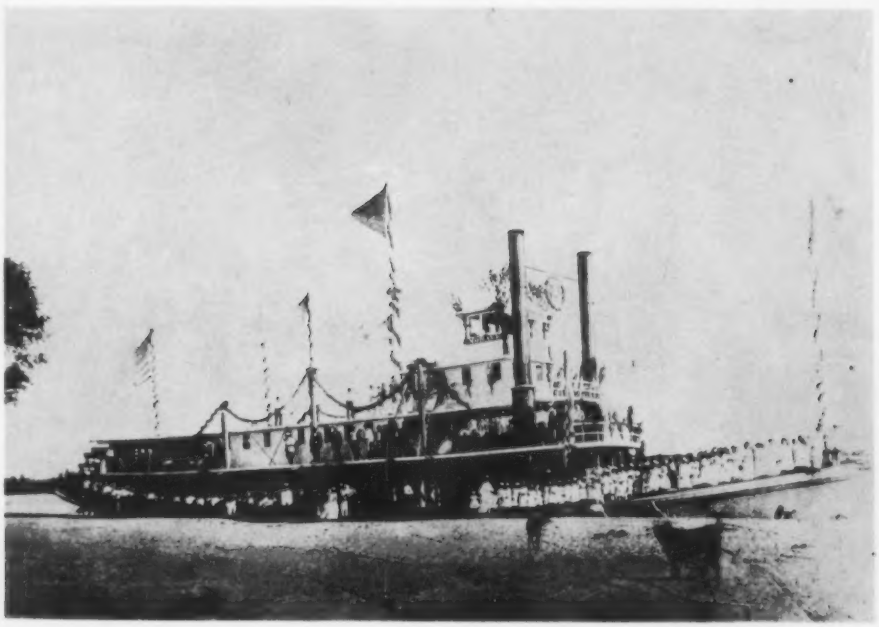
*Gila*, 1872, at Yuma, Arizona

*Reproduced from a photograph in Carleton E. Watkins,* Arizona and views adjacent to the Southern Pacific R. R. *(San Francisco, n.d.,* circa 1890-1900), *by permission of The Huntington Library*

*Gila*, 1872, at Yuma, Arizona. Southern Pacific railroad bridge in the background

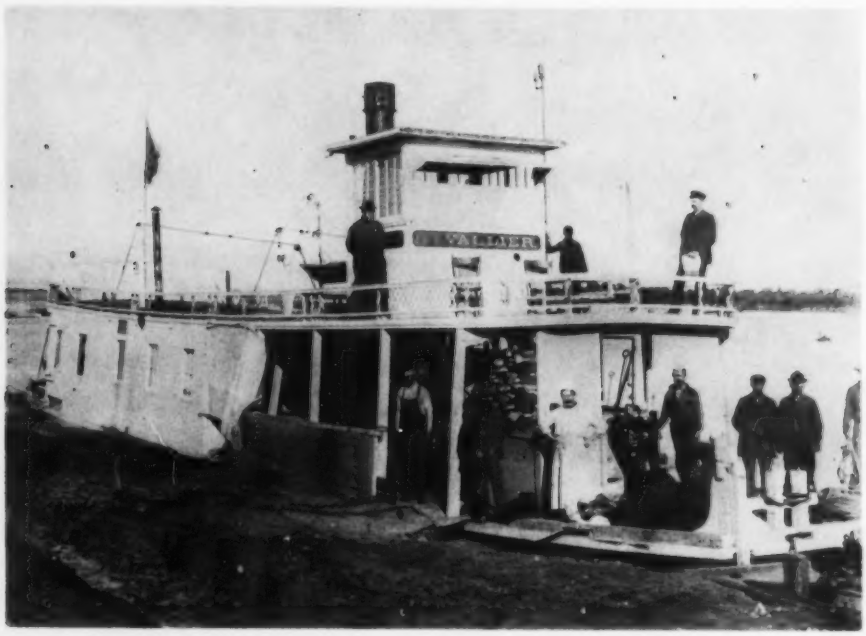
*Reproduced from a photograph in Carleton E. Watkins,* Arizona and views adjacent to the Southern Pacific R. R. *(San Francisco, n.d.,* circa 1890-1900), *by permission of The Huntington Library*

*Gila*, 1872, and *Cocopah*

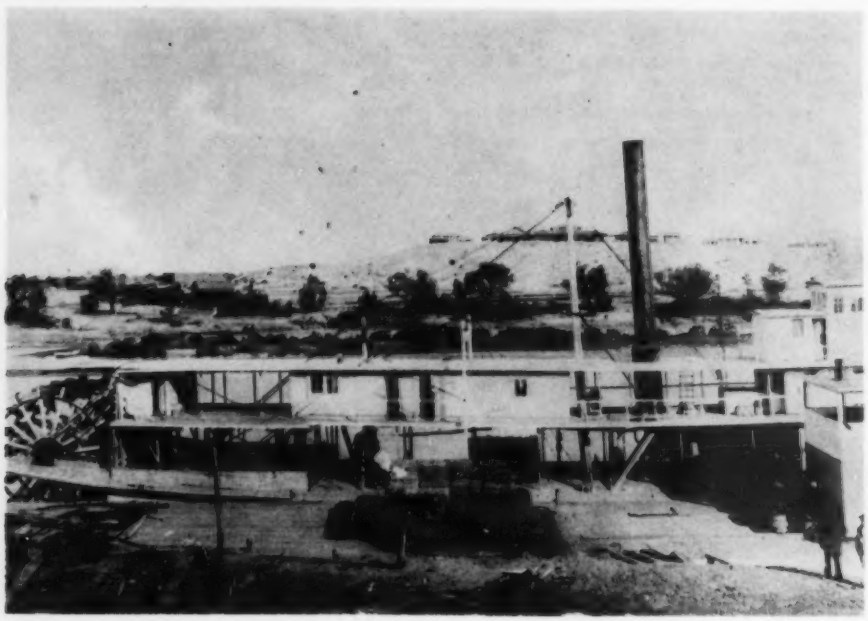


*Mohave* (II), 1876. The pride of the Colorado River, with a school picnic party aboard, 1 May 1876

*Reproduced from photographs in the collection of the Arizona Pioneer's Historical Society, Tucson*




*St. Vallier*



*Searchlight*, at Yuma, Arizona. Fort Yuma in the background

*Reproduced from photographs in the collection of the Arizona Pioneer's Historical Society, Tucson*

sharp turn to port and then to starboard brought the boat into the mesa country of the Virgin River. It took seventeen hours to steam the seventy-five miles from El Dorado Canyon to the Virgin unless the boat had to be heaved over the swift rapids by lines, when it took from six to eight hours more. But on the down trip the Captain was not troubled by slow time. His 170-foot boat raced down the rapids, shaved by huge boulders and canyon walls, and drew up panting at El Dorado Canyon two hours and forty minutes out from the mouth of the Virgin.[57] The 60-foot iron-plated sloop that Mellon sailed between the Canyon and the Virgin did not have as good luck as the steamboats. Once the Captain entrusted her to a Swede sailor, and she met her end on one of the canyon walls at Short and Dirty Rapids in extreme high water. A few months later when Mellon passed the spot on a steamboat, there forty feet above the river he saw the remains of his sloop wrapped around a pinnacle of rock.[58]

After the middle Eighties steamboating on the Colorado was practically at an end. The Southern Pacific Railroad reached Yuma in 1877 and in April of that year bought the Colorado Steam Navigation Company and abandoned navigation between Yuma and Port Isabel, moving the shipyard from there to Yuma. The steamboats, now operated by the Southern Pacific, ran for two or three years on a fairly regular schedule of once a week to Aubrey and Ehrenberg and once or twice a month to Mohave. After 1879 the number of trips upriver became fewer but continued at regular intervals until the Santa Fé crossed the Colorado in 1883 below Needles. Even then there was still some business on the river, for the mining towns between Yuma and Mohave and the El Dorado Canyon mines depended to a large extent on the boats. In 1890 about one trip a month was made from Yuma to the upriver towns and El Dorado Canyon. The *Cocopah (II)* and the *Colorado (II)* survived until the early Eighties; in the 1890's the *Gila* and the *Mohave (II)* were still in service, but they too had vanished before the end of the century.[59] The boats on the river at the time of the great flood of 1905-1906 were the *Searchlight*, the *St. Vallier*, the *Cochan*, and a large steam barge, the *Silas J. Lewis*.[60] Then to control the river and protect the Imperial Valley the Laguna Dam was built at Pot

[57] The navigation of the Colorado from El Dorado Canyon to the Virgin River is well described by Mellon in two articles, one in the *History of Arizona Territory* (San Francisco, 1884), pp. 317-318, the other in the Phoenix *Arizona Gazette*, 10 April 1895.

[58] The sloop, the *Southwester*, had a 56-foot keel, a 15-foot beam, and a 2-foot draft with eighteen tons of freight.

[59] The machinery was taken out of the *Cocopah (II)* in 1881. There is no record of the fate of the others.

[60] The *Searchlight* was 91 feet long and 18 feet wide; the *St. Vallier* 75 feet long and 17 feet beam; the *Cochan* 159 feet in length and 32 feet 8 inches wide. The barge was 115 feet long and 35 feet wide.

Holes above Yuma in 1907-1908, and steamboating on the Colorado was ended forever. As on every navigable river encountered by the westward movement across the continent after Henry Shreve perfected a steamboat for the western rivers, the steamboats on the Colorado had served their purpose in opening the frontier.

# *Registers, Enrollments and Licenses in the National Archives*[1]

*BY FORREST R. HOLDCAMPER*
*The National Archives*

'To rake the moon out the sea'— Peacock

RECORDS have almost a human persistence for survival. Twenty years ago Samuel Eliot Morison remarked that a fire had destroyed many of the old shipping records in the Department of Commerce and that correspondence with that department and with the Treasury had failed to elicit any information as to the whereabouts of the customs records for the period 1789-1801 called in to Washington 'some years ago' to aid in determining the French spoliation claims.[2] In 1936 and 1937 deputy examiners surveyed and arranged for transfer to The National Archives the remains of that fire and also the elusive records relating to the French spoliation claims.

[1] This article is the result of several years' study of these documents. I am very grateful to Mr. W. M. Lytle, former Deputy Commissioner of Navigation, for draughts from the well of his knowledge, and am indebted to the following past and present colleagues in The National Archives for aid and assistance: Robert Bahmer, Coburn Kidd, Leo Gerald, Paul Bishop, Allen Ross, Frank Nivert, Lyle Holverstott, Margaret Lamoreaux, and Charles Rocheleau. The article is based primarily on the records themselves although some printed sources have been valuable as background and framework, namely: Robert Mayo, *A Synopsis of the Commercial and Revenue System of the United States as Developed by Instructions and Decisions of the Treasury Department for the Administration of the Revenue Laws* (Washington: J. & G. S. Gideon, 1847); *Statutes at Large*; Thomas F. Gordon (compiler), *A Digest of the Treaties and Statutes of the United States Relating to Commerce, Navigation and Revenue* (Philadelphia: 1830); Treasury Department, *General Regulations under the Revenue and Collection Laws of the United States* (Washington: A. O. P. Nicholson, Public Printer, 1857); Treasury Department, *Regulations under the Registration Laws, January 30, 1869, Part I of Revised Customs Regulations* (Washington: Government Printing Office, 1869); *Annual Reports of the Commissioner of Navigation* separate 1885-1903, bound with the *Annual Reports of the Secretary of Commerce and Labor and of the Secretary of Commerce*, 1904-1939 (Washington: Government Printing Office, 1885-1939); Lloyd M. Short, *The Bureau of Navigation* (Baltimore: The Johns Hopkins Press, 1923; The National Archives, *Guide to the Material in The National Archives* (Washington: Government Printing Office, 1940).

Some other documentary sources in The National Archives have been helpful, particularly the *Tonnage Letter Book* of 1814 in the collection received from the Bureau of Marine Inspection and Navigation, letters to Collectors, 1789-1801, in the material relating to the French spoliation claims received from the Treasury Department, and letters from the Secretary of the Treasury to Collectors of Customs, 1789-1909.

In the custody of Miss Chatfield, Archivist of the Treasury Department, Treasury Building, Washington, D. C., are copies of additional circulars issued by the Secretary of the Treasury.

[2] Samuel Eliot Morison, 'The Custom-house Records in Massachusetts, as a Source of History,' *Massachusetts Historical Society Proceedings*, LIV (1920/21), 325-326.

Not only were the remains transferred (registers, 1815-1872; enrollments, 1815-1866) but also all surrendered copies of registers, enrollments and licenses in the custody of the Bureau of Marine Inspection and Navigation for vessels built prior to 1918. More than 1,300,000 individual documents were received and in the past four years several members of the staff of The National Archives have spent part or all of their time in arranging and making them available. In the course of this study much has been learned about the records and much remains to be learned. For instance, of the approximately 338,700 enrollments issued in the period 1815-1866 more than 127,700 were issued at ports in New England; of the 141,400 registers issued in the same period, 67,150 were granted there. Of this estimate of 480,000 registers and enrollments issued in the period 1815-1866, approximately the period of the burned records, not more than 5,000 were totally destroyed by the fire and another 10,000 were never received by the Register of the Treasury. The records relating to the French spoliation claims cover primarily the period 1789-1801, but some have been found both before and after those dates. The table below shows the results of this study to date and lists the holdings of The National Archives so far known by type of document, port and year. The table itself is explained by the footnote following it, but some explanation of what the documents are, of how and where they were filed, and of their possible use may be helpful.

Certificates of registry, license, and enrollment were issued after proper admeasurement and proof of build and ownership as evidence that the vessel, of five tons burden or over, was entitled to the rights and privileges of an American vessel. These included lower tonnage duties and certain immunities in international law. Until 1912, with a few exceptions, American vessels had to be built in the United States and even now only American vessels can engage in the coastwise trade. Registers were taken out when vessels engaged in foreign trade. An enrollment and a license for the various kinds of fishing and coasting trades were taken out for vessels of twenty tons burden or over, but a copy of the license, which had to be renewed yearly, was not retained except in the custom house until 1906 when consolidated licenses and enrollments began to be issued. Vessels from five to twenty tons burden engaged in the same type of trade received only a license. The content of registers and enrollments varies with the years but they usually contain the name of the managing owner and of the other owners with place of residence and shares owned (after 1850), the name of the vessel and of the home port and the master, the rig, the gross and (after 1864) the net tonnage,

the date and place and sometimes the material of build, and usually the name of builder (this only on the first document issued to a vessel), the dimensions, the official number and call letter (after 1866), the number of decks and masts, the type of stern, galleries and figure-head, the place, date and number of the previous document, the place and date of issuance, and an endorsement of the place, date and reason for surrender. Documents were permanent or temporary depending upon whether issued at the home port of the vessel or elsewhere. When there was any change in the type of trade, ownership, rig, tonnage, dimensions, or name, a new document had to be taken out and the old one surrendered to the collector.

Certificates of registry were made in triplicate. One copy, sealed and signed by the Collector or Deputy Collector of the port, and countersigned by the Naval Officer or Surveyor and the Register of the Treasury (after 1884 the Commissioner of Navigation or his successor), was given to the master for use on board the vessel. The second copy, which often was not sealed, but was usually as well written as the master's copy, was kept by the Collector at the custom house. The third copy, which was a 'record' copy and not usually well made, was sent to the Register of the Treasury for preservation.[3] When the master surrendered his copy for any reason he turned it in to the Collector of Customs at the nearest port. The Collector endorsed this copy as well as his own with the date, place and reason for surrender and the number of the new document issued, if any; cancelled the master's copy by cutting a hole in the signature of the Naval Officer or Surveyor; and sent, at the close of each business day, this copy as well as record copies of all documents issued that day, to the Register of the Treasury. A 'margin' or abstract was sent the Collector at the port of issue if different from the port of surrender.

The Register preserved both copies, bound the record ones into books by ports of issue, and pasted the surrendered or master's copies into pages of large scrap books so numbered as to correspond to the number issued. Blank pages were left for the copies not received, and some effort was made to complete the books by obtaining from the Collector a copy of his copy when the documents were known to be lost or destroyed. The Register also made an abstract or record of all registers and enrollments issued each year at each port.[4] Record books, scrap books and abstracts

[3] This 'record' copy was not sealed and often not properly countersigned. It also was not endorsed as to the reason for issuance of a new document as was the surrendered copy. The same system as that described above was followed for enrollments with the exception that they were not countersigned by any official in Washington.

[4] Called 'master abstracts' for convenience. They usually contain the issue number, date, rig, name of ship, name of managing owner and master, cause of issue, place and date of previous document, tonnage, place, date and cause of surrender.

before 1815 are not present and are presumed to be among the records lost in the burning of Washington in 1814.

Record and scrap books were maintained by the Register until 1867 for enrollments and until 1873 for registers. Record and surrendered copies of licenses for vessels under twenty tons were not required to be sent in to Washington until 1865 and are not complete until after 1875. Record books and 'master abstracts' including those for licenses from 1875 and for yacht licenses and enrollments from 1883 continued to be kept until 1911 or 1912. The surrendered copies were folded horizontally and filed by year and port in wooden transfer cases.

After the establishment of the Bureau of Navigation in 1884 to centralize within one bureau of the Treasury Department the administration of almost all rules and regulations pertaining to the enforcement of the navigation laws with the exception of those relating to steam vessels and safety devices, the record-keeping improved. The 'master abstracts' were more carefully made, and more pains were taken to make the surrendered copies complete. In 1866 a law requiring each documented vessel to have an official number had been passed, and that number was entered in the 'master abstracts.' Applications for and copies of awards of these numbers were preserved.

In the period 1885-1887, the Treasury Department called in registers and other records of the Collectors along the Atlantic seaboard for the period 1789-1801 in connection with the settlement of the French spoliation claims. Some Collectors sent in enrollments as well, and all these records remained in the custody of the Treasury Department until their transfer to The National Archives in 1937.

After 1911 the making of 'master abstracts' in books was discontinued and a card system, later a Kardex file, was substituted.[5] At that time and more especially somewhat later in 1912 and 1913 when the Bureau of Navigation was preparing to move to the then new Commerce Building at 19th and Pennsylvania Avenue, the books of record copies were checked somewhat cursorily with the scrap books and loose files of surrendered copies and were then destroyed. Since 1913 record copies have not been kept after a surrendered copy has been received. In 1919 the arrangement of the filing system was changed so that all documents issued to a given vessel regardless of type or port of issue were filed chronologically under the official number. Since each vessel kept the same official number permanently, the system was much simpler.

[5] The cards are still retained by the Bureau of Marine Inspection and Navigation. In 1938 the bureau again began to use books.

About six o'clock on the evening of 14 January 1921, the fire to which Mr. Morison referred broke out in the storerooms of the Commerce Department and destroyed some of the scrap books of surrendered copies in the period 1815-1872. Remnants of books were salvaged, and an attempt was made in 1933 with Civil Works Administration funds to restore some order to the chaos. Documents were taken out of a few undamaged books and were arranged by port. Funds ran short after a few months and nothing more was done until the records were transferred to The National Archives.

The records received by The National Archives in 1936 and 1937 from the Bureau of Marine Inspection and Navigation, with due regard for the losses noted above, consist in general of 'master abstracts,' 1815-1911/12; surrendered copies of registers and enrollments, 1815-1917; surrendered copies of licenses for vessels of five to twenty tons, 1865/76-1917; and surrendered copies of yacht licenses and enrollments, 1883-1917. These are arranged by type of document by year and port to 1919 and thereafter by official number. Many of the vessels built before 1918 did not become inactive until years later and in some cases are still in use. For these vessels the dates of the records extend as late as 1940, and for the vessels still in service an annual transfer of documents is made.[6]

From this large body of records, the history of almost any American vessel in the period can be traced from the date of build to the date of final disposition. The names of the owners can be traced throughout the life of the vessel and most of the names of the masters as well.[7] Local historians and genealogists will find the long list of names of particular value, especially as occupations of owners were often listed in the period before the Civil War. The whole body of the documents can be used to trace changes in format, in style, and in the use and development of woodcuts and steel engravings. The collector of early imprints will be delighted with some of the names of the firms printing the documents before 1860. To an expert on sphragistics, there are many interesting examples of wafer, impressed, and wax seals. To one interested in the development of corporation law, the changes in the listing of corporations through the years are noteworthy. The number of documents issued at each port year after year is a partial indication of the activity of the port, particularly as a shipbuilding port. The history of shipbuilding in the

[6] The bureau still retains documents for vessels built after 1917.

[7] Since about 1884 most changes of masters have been endorsed on the documents, and in many cases that was the early practice. Especially was that so when the master was changed at a foreign port where there was an American Consul.

United States as a whole since 1815 may be studied in greater detail and with more accuracy than before has been possible.

To many of us in The National Archives, these records have been an introduction to those auxiliary sciences that seemed so unreal as we struggled through Bernheim, and from a study of them some of us have become first-class land sailors. Not only does a faint smell of salt and oil linger about them but also a bit of the aura of that old monastery where diplomatics first took form. Sometimes as one looks down a steel-lined corridor and sees the glint from a bald head leaning over a reading glass one is reminded of a tonsured monk toiling peacefully away at his charters. It is a wry commentary on the present day that the modern monastery of The National Archives is one of the few buildings in Washington which may be bombproof. In any case, the documents here described are a partial record of American maritime history, and if they survive in as good condition the next hundred and twenty-five years as they have in the past, then indeed the earth if not the moon will have been raked out of the sea.

[8] The following table is intended as a tentative list. The physical condition of the documents precludes any definitive list for a number of years, and the well-known tendency for archives to appear where they have no right to be prevents any blanket statement of completeness. Even where the documents are shown to extend over the whole period 1789-1917, there may be gaps for any given port within a given year. Where the gaps extend for a number of years, the documents may yet be located, and in any case some information about most American vessels may be located in the 'master abstracts' for the period 1815-1911/12 and in the index maintained by the Bureau of Marine Inspection and Navigation since 1911.

If the beginning year of any port is later than 1815 it may be presumed either that issuance of documents from that port did not begin until that year or that earlier ones have been lost or destroyed. In many cases, however, documents of an earlier date may later be found. Likewise, if the ending date is earlier than 1917, it may be presumed that for some reason the port was discontinued as a port of documentation, although, again, the documents may be lost. Before the establishment of the Bureau of Navigation in 1884, and even until 1913, one cannot be sure when documents began or ceased to be issued at any port. In Mr. Lawrence Harper's phrase, 'law at the waterside' is different from statutory law or even from regulations as laid down by the Secretary of the Treasury. The list represents documents now existing issued by officials at the places noted, and if there be some strange to any compilation blame the tough fiber of man and chalk up a point for irrationality; if there be inaccuracies blame the author.

The symbol 'c' represents custom house copies. The remainder are ordinarily the surrendered copies turned in by the master although it must be remembered that when a master's copy was lost, stolen, mislaid, or otherwise destroyed, the Collector was asked to furnish a copy of his copy and that was placed in the files. When vessels were sold abroad as late as 1900, the Consul cut the register in half, kept half and gave the other half to the master who was to turn it in to the Collector of the port of arrival within eight days after his return to the United States. The Consul sent his half to the Secretary of State who transmitted it to the Register of the Treasury and later to the Commissioner of Navigation. The Collector likewise transmitted any half documents he received to the latter officials, but in a number of cases the master failed to deposit his document, and many a 'moiety' is in the files without its mate. In the period 1850-1860 for many ports, 'record' copies escaped destruction and in some cases are in better condition than the master's copies.

The ports are listed geographically by customs collection districts as the documents were arranged until 1919. Yacht licenses and enrollments, which were not filed separately until about 1883, are not listed because their number is too few to warrant another column. Before 1883 documents of this type are filed with enrollments.

## TABLE OF REGISTERS, ENROLLMENTS AND LICENSES IN THE NATIONAL ARCHIVES[8]

### *Maine*

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Passamaquoddy | 1815–1871 | 1815–1871 | 1866–1870 |
| Eastport | 1870–1917 | 1868–1917 | 1866–1917 |
| Lubec | | 1868–1913 | 1870–1913 |
| Calais | 1869–1917 | 1868–1917 | 1871–1917 |
| Machias | 1815–1917 | 1815–1917 | 1865–1917 |
| Jonesport | 1873–1875 | 1873–1875 | 1873–1875 |
| Millbridge | 1869 | 1869 | 1868–1869 |
| Cherryfield | 1841–1875 | 1841–1875 | 1868–1875 |
| Frenchman's Bay | 1815–1834 | 1815–1834 | |
| Gouldsboro | 1850–1875 | 1845–1875 | 1867–1875 |
| Sullivan | 1838–1876 | 1835–1845)<br>1850–1876) | 1865–1876 |
| Ellsworth | 1832–1843)<br>1852–1917) | 1835–1917 | 1866–1917 |
| Southwest Harbor | 1838–1917 | 1835–1917 | 1865–1917 |
| Mt. Desert Ferry | 1889–1913 | 1885–1913 | 1885–1913 |
| Castine | 1815–1917 | 1817–1820)<br>1828–1917) | 1865–1917 |
| Green's Landing | | 1897 | 1897 |
| Bucksport | 1832–1917 | 1828–1917 | 1866–1917 |
| Sedgwick | 1846–1880 | 1850–1913 | 1866–1893 |
| Brooklin | | | 1894–1913 |
| Penobscot | 1789–1803)[c]<br>1815–1828) | 1815–1828)<br>1833–1850) | |
| Deer Isle | 1873–1880 | 1866–1880 | 1867–1880 |
| South Deer Isle | 1872–1880 | 1866–1880 | 1868–1880 |
| Bangor | 1822–1917 | 1845–1917 | 1867–1917 |
| Frankfort | 1829–1872 | 1829–1872 | 1867–1872 |
| Winterport | 1873–1875 | 1868–1913 | 1868–1913 |
| Belfast | 1820–1913 | 1822–1913 | 1865–1913 |
| North Haven | | 1870–1913 | 1870–1913 |
| Camden | 1846–1880 | 1848–1913 | 1865–1913 |
| Searsport | 1846–1881 | 1848–1881 | 1867–1881 |
| Stockton | 1866–1877 | 1867–1877 | 1867–1877 |
| Rockport | | 1895–1913 | 1895–1913 |
| Vinalhaven | 1912–1917 | 1876–1917 | 1876–1917 |
| Waldoboro | 1815–1913 | 1815–1844)<br>1846–1913) | 1865–1913 |
| Damariscotta | 1873–1880 | 1868–1913 | 1868–1913 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Thomaston | 1830–1880 | 1830–1913 | 1865–1913 |
| Rockland | 1830–1917 | 1849–1917 | 1865–1917 |
| Nobleboro | 1830–1875 | 1830–1875 | 1866–1875 |
| St. George | 1869–1879 | 1869–1879 | 1869–1879 |
| Wiscasset | 1792–1801)[c]<br>1815–1913) | 1794–1801)[c]<br>1815–1846)<br>1850–1856)<br>1866–1913) | 1866–1913 |
| Boothbay Harbor | 1870–1917 | 1870–1917 | 1870–1917 |
| Bath | 1792–1801)[c]<br>1817–1820)<br>1824–1917) | 1793–1801)[c]<br>1815–1818)<br>1820–1843)<br>1845–1917) | 1865–1917 |
| Portland | 1815–1917 | 1815–1917 | 1865–1917 |
| Saco | 1820–1913 | 1815–1820)<br>1825–1833)<br>1836–1862)<br>1866–1913) | 1867–1913 |
| Kennebunk | 1800–1801)[c]<br>1821–1911) | 1800–1801)[c]<br>1815–1913) | 1800–1801)[c]<br>1866–1913) |
| York | 1789–1806)[c]<br>1815–1869)<br>1901–1913) | 1822,<br>1865–1913 | 1868–1913 |
| | *New Hampshire* | | |
| Portsmouth | 1791–1801)[c]<br>1815–1917) | 1815–1917 | 1865–1917 |
| | *Massachusetts* | | |
| Newburyport | 1789–1801)[c]<br>1815–1913 | 1815–1835)<br>1837–1840)<br>1851–1913) | 1867–1913 |
| Ipswich | 1820–1840 | 1815–1833)<br>1837–1866) | |
| Gloucester | 1789–1803)[c]<br>1815–1917 | 1815–1847)<br>1849–1853)<br>1856–1917) | 1865–1917 |
| Salem | 1784–1791 a few)[c]<br>1792–1801)[c]<br>1815–1917) | 1789–1793 a few)[c]<br>1815–1819)<br>1822–1917) | 1867–1917 |
| Beverly | | 1844–1865 | |
| Marblehead | 1792–1801)[c]<br>1815–1910) | 1815–1836)<br>1838–1846)<br>1848–1913) | 1865–1913 |
| Lynn | | 1836–1913 | 1868–1913 |
| Boston and Charlestown | 1789–1801)[c]<br>1815–1917) | 1815–1852)<br>1854–1917) | 1865–1917 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Hingham | 1853,<br>1868–1870 | 1831–1866 | |
| Cohasset | 1853,<br>1868–1870 | 1831–1866 | 1869–1913 |
| Plymouth | 1789–1803)[c]<br>1815–1909) | 1815–1853)<br>1860,<br>1867–1913) | 1868–1913 |
| Duxbury | 1853,<br>1868–1870 | 1836–1840)<br>1867–1913) | 1866–1913 |
| Scituate | 1853,<br>1868–1870 | 1836–1845)<br>1868–1913) | 1868–1913 |
| Kingston | 1853,<br>1868–1870 | 1826,<br>1834–1839)<br>1846–1853)<br>1861–1913) | |
| Barnstable | 1815–1913 | 1815–1831)<br>1833–1841)<br>1844–1849)<br>1852–1856)<br>1859–1913) | 1866–1913 |
| Dennis | | 1852–1913 | 1875–1913 |
| Wellfleet | 1832–1880 | 1831–1841)<br>1844–1850)<br>1852–1856)<br>1859–1913) | 1866–1913 |
| Provincetown | 1815–1917 | 1822,<br>1827–1830)<br>1832–1841)<br>1844–1847)<br>1849,<br>1852–1856)<br>1859–1917) | 1865–1917 |
| Chatham | 1824–1876 | 1824–1847)<br>1849,<br>1852–1856)<br>1859–1913) | 1865–1913 |
| South Dennis | 1846–1913 | 1852–1854)<br>1856,<br>1859–1913) | 1867–1913 |
| Hyannis | 1866–1877 | 1867–1913 | 1866–1913 |
| Falmouth | 1827–1877 | 1867–1913 | 1867–1913 |
| Woods Hole | | 1878–1883 | 1878–1883 |
| Nantucket | 1815–1913 | 1815–1849)<br>1851–1913) | 1867–1913 |
| Edgartown | 1815–1911 | 1815–1840)<br>1852,<br>1866–1913) | 1865–1913 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Tisbury | | 1870 | 1870 |
| New Bedford | 1815–1917 | 1815–1830)<br>1834–1838)<br>1840–1849)<br>1852,<br>1854–1917) | 1865–1917 |
| Wareham | 1873–1876 | 1869–1913 | 1869–1913 |
| Dighton | 1789–1806)[c]<br>1815–1833) | 1815–1833 | |
| Fall River | 1834–1913 | 1833–1843)<br>1847–1913) | 1866–1913 |
| | *Rhode Island* | | |
| Providence | 1791–1801)[c]<br>1815–1913) | 1815–1913 | 1865–1913 |
| Bristol and Warren | 1815–1899 | 1815–1900 | 1866–1900 |
| Newport | 1790–1801)[c]<br>1815–1917) | 1791–1801)[c]<br>1815,<br>1821–1917) | 1793–1801)[c]<br>1865–1917) |
| | *Connecticut* | | |
| Stonington | 1842–1913 | 1842–1855)<br>1864–1913) | 1865–1913 |
| New London | 1790–1801)[c]<br>1815–1917) | 1815–1822)<br>1828–1913) | 1865–1913 |
| Middletown | 1795–1803)[c]<br>1815–1885) | 1815–1885 | 1865–1885 |
| Hartford | | 1888–1917 | 1888–1917 |
| New Haven | 1789–1805)[c]<br>1815–1913) | 1795–1802)[c]<br>1815–1913) | 1865–1913 |
| Bridgeport – Fairfield | 1789–1801)[c]<br>1815–1912) | 1789–1793 a few)[c]<br>1815–1832)<br>1834–1847)<br>1852–1853)<br>1857–1863)<br>1867–1913) | 1866–1913 |
| Stamford | 1901–1902 | 1896–1913 | 1896–1913 |
| | *New York* | | |
| New York | 1784–1790 a few)[c]<br>1791–1801)[c]<br>1815–1917) | 1789–1801 a few)[c]<br>1815–1831)<br>1833–1858)<br>1860–1864)<br>1866–1917) | 1865–1917 |
| Albany | | 1838–1917 | 1865–1917 |
| Troy | 1873–1874 | 1842–1866 | 1867–1917 |
| Hudson | 1818–1822 | 1815–1821 | |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Patchogue | | 1875–1917 | 1875–1917 |
| Port Jefferson | 1854–1880 | 1854–1913 | 1865–1913 |
| Cold Spring | 1848–1856 | 1854–1913 | 1868–1913 |
| Sag Harbor | 1819–1842)<br>1864,<br>1904–1910) | 1793–1805)[c]<br>1815–1913) | 1865–1913 |
| Greenport | 1848–1854)<br>1873–1900) | 1847,<br>1849–1900) | 1865–1900 |
| | *New Jersey* | | |
| Newark | 1834–1917 | 1834–1917 | 1865–1917 |
| Perth Amboy | 1789–1806)[c]<br>1823–1917 | 1793–1801)[c]<br>1815–1826)<br>1830–1841)<br>1843–1917) | 1865–1917 |
| Tuckerton | 1852–1871 | 1815–1825)<br>1835–1864)<br>1866–1913) | 1866–1913 |
| Great Egg Harbor | 1815–1868<br>1873–1874 | 1815–1816)<br>1825–1833)<br>1836–1841)<br>1844–1846)<br>1848–1853)<br>1859–1874) | 1866–1874 |
| Somer's Point | 1874–1889 | 1866–1913 | 1866–1913 |
| Bridgeton | 1815–1875 | 1815–1913 | 1865–1913 |
| Burlington | 1820 | 1815–1856)<br>1903–1913) | 1903–1913 |
| Lamberton | | 1815–1817)<br>1822–1913) | 1867–1913 |
| Mount Holly | | 1815–1816)<br>1828–1843)<br>1848–1852) | |
| Trenton | | 1816,<br>1879–1903 | 1879–1903 |
| Bordentown | | 1815–1822 | |
| Camden | 1836–1876 | 1838–1917 | 1866–1917 |
| | *Pennsylvania* | | |
| Philadelphia | 1815–1917 | 1815–1853)<br>1856–1917) | 1865–1917 |
| | *Delaware* | | |
| Wilmington | 1815–1917 | 1815–1917 | 1865–1917 |
| New Castle | 1877–1878 | 1836–1913 | 1868–1913 |
| Seaford | | 1872–1913 | 1872–1913 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| | | *Maryland* | |
| Baltimore | 1789–1799)[c] 1801,[c] 1815–1917) | 1815–1917 | 1865–1917 |
| Chester | | 1815–1822 | |
| Oxford | 1815–1830 | 1815–1823) 1827–1832) 1834–1867) | 1866–1867 |
| Havre de Grace | 1868–1878 | 1815–1821) 1837–1878) | 1866–1878 |
| Chesapeake City | | 1853–1860 | |
| Annapolis | 1824–1875 | 1815–1852) 1855–1863) 1866–1913) | 1867–1913 |
| Nottingham | | 1815–1822 | |
| Llewellensburg | | 1860–1867 | 1866–1867 |
| Town Creek | | 1830–1852) 1857–1863) 1866–1913) | 1870–1913 |
| St. Mary's | 1815–1842) 1875–1876) | 1815–1876 | 1866–1876 |
| Annamessex | 1864 | 1860–1867 | 1867 |
| Hooper's Island | | 1872–1874 | 1872–1874 |
| Fox Creek | | 1874 | 1874 |
| Crisfield | 1868, 1873–1895 | 1867–1917 | 1867–1917 |
| Vienna | 1834 | 1815–1846) 1852–1855) 1858–1913) | 1867–1913 |
| Deal's Island | | 1850–1867 | 1866–1867 |
| Snow Hill | 1815–1835 | 1815–1867 | 1866–1867 |
| | | *District of Columbia* | |
| Georgetown | 1815–1891 | 1815–1834) 1846–1895) | 1865–1895 |
| Washington | 1900–1911 | 1895–1913 | 1895–1913 |
| | | *Virginia* | |
| Alexandria | 1815–1889 | 1815–1856) 1866–1913) | 1865–1913 |
| Tappahannock | 1815–1861) 1866–1885) | 1815–1861) 1866–1913) | 1866–1913 |
| Dumfries | | 1815–1821 | |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Yeocomico | 1816 | 1815–1820)<br>1828–1834)<br>1839–1845)<br>1856–1860)<br>1867) | 1867 |
| Yorktown | 1815–1879 | 1815–1861)<br>1866–1879) | 1866–1913 |
| Richmond | 1815–1909 | 1815–1860)<br>1866–1913) | 1867–1913 |
| East River | 1815–1838 | 1815–1850)<br>1866) | |
| Petersburg | 1815–1860)<br>1866–1881) | 1815–1828)<br>1835–1849)<br>1852–1855)<br>1858–1859)<br>1866–1913) | 1869–1913 |
| Hampton | 1819 | 1815–1822 | |
| Newport News | 1883–1917 | 1883–1917 | 1888–1917 |
| Norfolk and Portsmouth | 1815–1861)<br>1866–1917) | 1815–1821)<br>1825–1861)<br>1866–1917) | 1865–1917 |
| Cape Charles City | | 1887–1913 | 1887–1913 |
| Eastville | 1874–1875 | 1872–1888 | 1872–1888 |
| Chincoteague | 1871–1875 | 1863–1913 | 1865–1913 |
| Accomac | | 1849–1861)<br>1863–1913) | 1865–1913 |
| Cherrystone | 1815–1840 | 1835–1861)<br>1866–1872) | 1867–1872 |
| Onancock | | 1873–1913 | 1873–1913 |
| Folly Landing | 1815–1841 | 1815,<br>1824–1844) | |
| | *North Carolina* | | |
| Elizabeth City | 1815–1861 | 1815–1861)<br>1866–1917) | 1867–1917 |
| Edenton | 1815–1860)<br>1866–1895) | 1815–1860)<br>1866–1902) | 1866–1902 |
| Plymouth | 1815–1860 | 1815–1836)<br>1846–1860)<br>1866–1913) | 1867–1913 |
| Manteo | | 1907–1917 | 1908–1917 |
| Washington | 1815–1845 | 1815–1860)<br>1866–1913) | 1866–1913 |
| Newbern | 1815–1860)<br>1866–1902) | 1815–1860)<br>1866–1913) | 1866–1913 |
| Ocracoke | 1815–1860 | 1815–1837)<br>1842,<br>1866–1913) | 1867–1913 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Beaufort | 1815–1860)<br>1866–1894) | 1815–1860)<br>1866–1894) | 1865–1894 |
| Wilmington | 1815–1860)<br>1866–1917) | 1815–1850)<br>1852)<br>1866–1917) | 1867–1917 |
| | *South Carolina* | | |
| Georgetown | 1859–1860)<br>1866–1908) | 1869–1913 | 1869–1913 |
| Charleston | 1815–1860)<br>1866–1917) | 1815–1821)<br>1825–1860)<br>1866–1917) | 1867–1917 |
| Beaufort | 1866–1913 | 1867–1913 | 1867–1913 |
| Port Royal | 1863–1871 | 1863–1865 | 1867–1871 |
| | *Georgia* | | |
| Savannah | 1793–1800 a few)[c]<br>1815–1917) | 1793–1800 a few)[c]<br>1815–1860)<br>1866–1917) | 1866–1917 |
| Sunbury | | 1822–1831 | |
| Darien | 1815–1860)<br>1866–1870) | 1815–1858)<br>1866–1913) | 1871–1913 |
| Brunswick | 1865–1917 | 1815–1850)<br>1855)<br>1866–1917) | 1871–1913 |
| St. Mary's | 1815–1860)<br>1866–1912) | 1815–1821)<br>1828–1858)<br>1866–1913) | 1871–1913 |
| Satilla | 1874–1881 | 1874–1881 | 1874–1881 |
| | *Florida* | | |
| Fernandina | 1856–1860)<br>1866–1870)<br>1885–1917) | 1858–1859)<br>1866–1917) | 1868–1917 |
| Jacksonville | 1845–1854)<br>1859–1863)<br>1871–1917) | 1830–1838)<br>1843–1860)<br>1866–1917) | 1868–1917 |
| St. Augustine | 1821–1843)<br>1866)<br>1880–1903) | 1822–1844)<br>1866–1913) | 1867–1913 |
| Indian River | | 1870 | 1870 |
| Key West | 1834–1863)<br>1868)<br>1871–1917) | 1825–1828)<br>1839–1857)<br>1863)<br>1866–1917) | 1865–1917 |
| Miami | 1909–1917 | 1910–1917 | |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Tampa | 1889–1917 | 1880–1917 | 1881–1917 |
| Cedar Keys | 1868)<br>1873–1907) | 1867–1913 | 1867–1913 |
| Bay Port | | 1856 | |
| St. Marks | 1845–1854)<br>1859–1860)<br>1866–1876) | 1838–1860)<br>1866–1876) | 1870–1876) |
| Magnolia | | 1829–1832 | |
| Apalachicola | 1835–1854)<br>1859–1860)<br>1868)<br>1871–1917) | 1833)<br>1836–1853)<br>1859–1861)<br>1865–1917) | 1865–1917 |
| Pensacola | 1821–1837)<br>1841)<br>1859–1863)<br>1868)<br>1871–1917) | 1822–1860)<br>1865–1917) | 1866–1917 |
| | *Alabama* | | |
| Mobile | 1817–1917 | 1817–1839)<br>1852–1860)<br>1865–1917) | 1865–1917 |
| Blakely | 1818–1826 | 1823–1826 | |
| | *Mississippi* | | |
| Pearlington | 1825–1830 | 1823–1844 | |
| Gulfport | 1904–1917 | 1904–1917 | 1904–1917 |
| Shieldsborough | 1856–1859)<br>1873–1904) | 1845–1861)<br>1866–1913) | 1867–1913 |
| | *Louisiana* | | |
| New Orleans | 1815–1860)<br>1863–1917) | 1815–1823)<br>1826–1833)<br>1837–1861)<br>1863–1917) | 1865–1917 |
| Morgan City | 1911–1917 | 1913–1917 | |
| Franklin (Teche) | 1835–1861 | 1832–1835)<br>1844–1857)<br>1866–1871) | 1868–1871 |
| New (Nova) Iberia | | 1824–1834 | |
| Brashear (Lake Charles) | 1874–1913 | 1871–1913 | 1871–1913 |
| | *Texas* | | |
| Port Arthur | 1906–1917 | 1906–1917 | |
| Galveston | 1846–1860)<br>1866–1917) | 1846–1860)<br>1866–1917) | 1866–1917 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Houston | 1909–1917 | 1909–1917 | 1909–1917 |
| Saluria | | 1848–1850 | |
| Eagle Pass (El Paso) | 1877–1888 | 1888–1893 | 1888–1893 |
| La Vaca | | 1893–1913 | 1893–1913 |
| Indianola | 1867–1881 | 1846–1860)<br>1866–1888) | 1865–1888 |
| La Salle | 1852–1860)<br>1866) | 1851–1860)<br>1866) | 1866 |
| Corpus Christi | 1869–1913 | 1867–1913 | 1867–1913 |
| Point Isabel | 1849–1860 | 1849–1860)<br>1866) | |
| Brownsville | 1860)<br>1865–1906) | 1865–1913 | 1867–1913 |
| | *Puerto Rico* | | |
| San Juan | 1900–1917 | 1900–1917 | 1901–1917 |
| | *Mississippi* | | |
| Natchez | 1837 | 1835–1837)<br>1844)<br>1848)<br>1891–1913) | 1891–1913 |
| Vicksburg | | 1846–1860)<br>1865–1913) | 1873–1913 |
| | *Tennessee* | | |
| Memphis | 1874–1879 | 1852–1913 | 1873–1913 |
| Nashville | | 1832–1860)<br>1864–1913) | 1883–1913 |
| Knoxville | | 1853 | |
| Chattanooga | | 1889–1913 | 1890–1913 |
| | *Kentucky* | | |
| Paducah | 1872 | 1856–1865)<br>1867–1913) | 1873–1913 |
| Louisville | 1873–1879 | 1819–1917 | 1869–1917 |
| | *Missouri* | | |
| St. Louis | 1870–1879 | 1833–1917 | 1870–1917 |
| Kansas City | | 1883–1917 | 1883–1917 |
| St. Joseph | | 1871–1913 | 1891–1913 |
| | *Nebraska* | | |
| Omaha | | 1878–1917 | 1883–1917 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| | *Montana* | | |
| Great Falls | | 1899–1913 | 1899–1913 |
| | *North Dakota* | | |
| Pembina | | 1878–1917 | 1878–1917 |
| | *Iowa* | | |
| Sioux City | | 1902–1913 | 1902–1913 |
| Keokuk | | 1859–1868 | |
| Burlington | | 1859–1913 | 1873–1913 |
| Dubuque | | 1856–1913 | 1871–1913 |
| | *Minnesota* | | |
| St. Paul | | 1857–1917 | 1871–1917 |
| | *Wisconsin* | | |
| La Crosse | | 1874–1913 | 1874–1913 |
| | *Illinois* | | |
| Galena | | 1853–1913 | 1872–1913 |
| Rock Island | | 1891–1913 | 1891–1913 |
| Quincy | | 1858–1913 | 1868–1913 |
| Peoria | | 1857–1913 | 1900–1913 |
| Alton | | 1859–1913 | 1870–1913 |
| Cairo | 1871–1879 | 1864–1913 | 1872–1913 |
| | *Indiana* | | |
| Evansville | | 1859–1913 | 1871–1913 |
| New Albany | | 1851–1864 | |
| | *Ohio* | | |
| Cincinnati | 1873–1879 | 1831–1917 | 1867–1917 |
| | *West Virginia* | | |
| Parkersburg | | 1868–1913 | 1869–1913 |
| Wheeling | | 1840–1913 | 1867–1913 |
| | *Pennsylvania* | | |
| Pittsburgh | | 1831–1917 | 1869–1917 |
| | *Vermont* | | |
| Alburg | 1822 | 1839)<br>1843–1847)<br>1849–1861) | |
| Burlington | 1818–1826 | 1854)<br>1861–1862)<br>1864–1865)<br>1867–1917) | 1875–1917 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| | | *New York* | |
| Plattsburg | 1874–1876 | 1843–1913 | 1865–1913 |
| Champlain | | 1877–1913 | 1877–1913 |
| Rouses Point | | 1905–1917 | 1905–1917 |
| Alexandria Bay | | 1866 | |
| Ogdensburg | 1817–1829)<br>1874–1917) | 1838–1917 | 1865–1917 |
| Cape Vincent | 1821–1830 | 1827–1858)<br>1867–1913) | 1867–1913 |
| French Creek | | 1835–1913 | 1870–1913 |
| Sackets Harbor | 1815–1829)<br>1841) | 1816–1874 | 1870–1874 |
| Oswego | 1815–1830)<br>1864) | 1815–1818)<br>1824)<br>1840–1917) | 1865–1917 |
| Genesee | 1818–1831 | 1821–1835 | |
| Rochester | | 1851–1917 | 1874–1917 |
| Niagara Falls | | 1898–1917 | 1898–1917 |
| Lewiston | | 1830–1863 | |
| Suspension Bridge | | 1863–1898 | 1872–1898 |
| Buffalo (Buffalo Creek) | 1816–1829)<br>1859–1863)<br>1871–1917) | 1820–1827)<br>1836–1917) | 1869–1917 |
| Dunkirk | 1862 | 1855–1913 | 1870–1913 |
| | | *Pennsylvania* | |
| Presque Isle | 1815–1829 | 1819–1857 | |
| Erie | 1866–1907 | 1860–1913 | 1867–1913 |
| | | *Ohio* | |
| Cuyahoga | 1829–1843 | 1821)<br>1829–1832) | |
| Cleveland | 1873–1917 | 1833–1917 | 1866–1917 |
| Sandusky | 1859–1903 | 1842–1913 | 1868–1913 |
| Portland | | 1830–1842 | |
| Toledo | 1868–1917 | 1846–1917 | 1866–1917 |
| Miami | | 1825)<br>1830) | |
| Maumee City | | 1832–1850 | |
| | | *Michigan* | |
| Detroit | 1815–1865 | 1817)<br>1821)<br>1830)<br>1841–1917) | 1865–1917 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| Port Huron | 1867–1917 | 1864)<br>1866–1917) | 1867–1917 |
| Marquette | 1869–1878 | 1869–1913 | 1870–1913 |
| Escanaba | | 1872 | 1872 |
| Michilimackinac | 1817)<br>1859) | 1831–1863 | |
| Sault Ste. Marie | | 1847–1917 | 1868–1917 |
| Grand Haven | | 1867–1913 | 1866–1913 |
| | *Illinois* | | |
| Chicago | 1860–1917 | 1847–1917 | 1865–1917 |
| | *Wisconsin* | | |
| Milwaukee | 1865–1917 | 1853–1917 | 1868–1917 |
| Manitowoc | | 1863 | |
| Green Bay | | 1858–1862 | |
| | *Minnesota* | | |
| Duluth | 1890–1911 | 1871–1913 | 1871–1913 |
| | *Arizona* | | |
| Nogales | 1892–1908 | 1894–1913 | 1894–1913 |
| Yuma | | 1895–1913 | 1895–1913 |
| | *California* | | |
| San Diego | 1854–1917 | 1859)<br>1864–1917) | 1868–1917 |
| San Pedro | 1857–1862 | 1855)<br>1859)<br>1861–1862) | |
| Wilmington | 1875–1892 | 1872–1892 | 1872–1892 |
| Los Angeles | 1892–1917 | 1892–1917 | 1892–1917 |
| Santa Barbara | | 1867 | 1867 |
| Port San Luis | 1916–1917 | | |
| Monterey | 1855–1857 | 1854–1857)<br>1859–1860) | |
| Stockton | 1862 | 1852–1865)<br>1867–1913) | 1869–1913 |
| Sacramento | 1851)<br>1862) | 1851–1865 | |
| Benicia | 1851 | 1852–1913 | 1871–1913 |
| Sonoma | | 1851 | |
| San Francisco | 1849–1917 | 1849–1917 | 1866–1917 |
| Port Harford | 1908–1913 | | |
| Eureka | 1875–1917 | 1869–1917 | 1867–1917 |

| *Name of Port or District* | *Registers* | *Enrollments* | *Licenses* |
|---|---|---|---|
| | *Oregon* | | |
| Coos Bay | 1873–1910 | 1873–1910 | 1874–1910 |
| Empire City | | 1876–1913 | 1876–1913 |
| Port Orford | | 1856–1864 | |
| Gardiner | | 1856–1864 | |
| Yaquina | | 1882–1917 | 1882–1917 |
| Astoria | 1849–1917 | 1852–1917 | 1865–1917 |
| Portland | 1870–1917 | 1870–1917 | 1870–1917 |
| | *Washington* | | |
| Port Townsend | 1856–1917 | 1854–1917 | 1867–1917 |
| Port Angeles | 1863–1866)<br>1891–1917 | 1863–1865)<br>1891–1917) | 1896–1917 |
| Olympia | 1852)<br>1854) | | |
| Seattle | 1892–1917 | 1893–1917 | 1894–1917 |
| Tacoma | | 1895–1917 | 1895–1917 |
| | *Alaska* | | |
| Ketchikan | | 1900–1917 | 1900–1917 |
| Mary's Island | 1892–1900 | 1892–1900 | 1892–1900 |
| Unga | | 1896–1913 | 1896–1913 |
| Sulzer | | 1907–1913 | 1907–1913 |
| Wrangell | 1897–1917 | 1887–1917 | 1887–1917 |
| Tyee | | 1909–1913 | 1909–1913 |
| Sitka | 1867–1897 | 1877–1913 | 1877–1913 |
| Eagle | 1901–1916 | | |
| Juneau | 1897–1917 | 1887–1917 | 1887–1913 |
| Skagway (Dyea) | | 1898–1913 | 1898–1913 |
| Cook Inlet | | 1898–1900 | 1898–1900 |
| Haines | | 1898–1900 | 1898–1900 |
| Cordova | | 1909–1913 | 1909–1913 |
| Orca | | 1898–1913 | 1898–1913 |
| Valdez | | 1901–1913 | 1901–1913 |
| Kodiak | 1878–1898 | 1881–1913 | 1881–1913 |
| Sand Point | | 1892–1913 | 1892–1913 |
| Unalaska | 1880–1916 | 1892–1917 | 1892–1917 |
| St. Michaels' | 1898–1913 | 1898–1913 | 1898–1913 |
| Nome | 1904–1916 | 1903–1917 | 1903–1917 |
| | *Territory of Hawaii* | | |
| Honolulu | 1900–1917 | 1900–1917 | 1900–1917 |

# Notes

## Tonnage Rules in 1799

One of the most confusing elements in the study of American shipping records during the eighteenth and nineteenth centuries is the apparent variety of ways by which the tonnage of vessels was calculated. Two of the most common were known as *carpenter's measure* and *custom house measure*.

Shortly after the organization of the Federal government custom house measure was standardized. Joshua Humphreys on 2 March 1799 noted the rule in his memorandum book.[1]

'Custom House Measurements of Ships & other Vessels. To ascertain the tonnage of any Ship or Vessel the surveyor or such other person as shall be appointed by the Collector of the District to measure the same, shall if the said Ship or vessel be double decked take the length thereof from the fore part of the main stem to the after part of the stern post, above the upper deck, the breadth thereof at the broadest part above the main wales, half of which breadth shall be accounted the depth of such vessel, & shall then deduct from the length three fifths of the breadth – Multiply the remainder by the breadth & the product by the depth, & shall divide this last product by 95, the quotient whereof shall be deemed the true contents or tonnage of such Ship or vessel – and if such ship or vessel be single decked the said Surveyor or other person shall take the length & breadth as above directed in respect to a double decked ship or vessel Shall deduct from the said length threefifths of the breadth, and taking the depth from the under side of the deck plank to the ceiling in the hold, shall multiply & divide as aforesaid, and the quotient shall be deemed the tonnage of such ship or vessel.'

Carpenter's measure seems to have been far more complicated. It involved not only the use of arbitrarily determined dimensions, definitions of which seem to have been lost, but also the formula itself apparently varied in different sections of the nation. Through the correspondence concerning a squabble over a contract payment both the method of measuring a vessel and of calculating her carpenter's tonnage in Philadelphia has come to light. On 3 February 1804 Thomas Turner, the Navy Department Auditor wrote Joshua Humphreys:[2]

'Dear Sir

Will you do me the favour to State to me what was the rule for ascertaining Tonnage of vessels Carpenters Measure at Phila. in the year 1799 1800.

The frigate *Adams* was built at New York by contract pr Tonnage Carpenters Measure to be ascertained agreeably to the rule at Phila. and a disagreement has a risen respecting the Tonnage she Contains – and I wish to ascertain it from the Most Correct information – Excuse the liberty and believe me to be

Very respectfully Dr Sir
Yr mo obtd svt
Tho Turner'

The reply dated 8 February 1804 not only gave Turner the rule in words but it also included a sketch to make the method of taking the measurements perfectly clear.[3]

'Dear Sir

I shall with pleasure endeavour to explain the Mode of ascertaining the Tonnage you require I hope it will be satisfactory.

The rule for ascertaining of Tonage of Vessels Carpenters Measure in this Port in the Years 1799 & 1800 was as follows –

[1] Joshua Humphreys' Note Book, Dreer Collection, Historical Society of Pennsylvania.

[2] Joshua Humphreys' Correspondence I, 110.

[3] Joshua Humphreys' Correspondence I, 110 reverse.

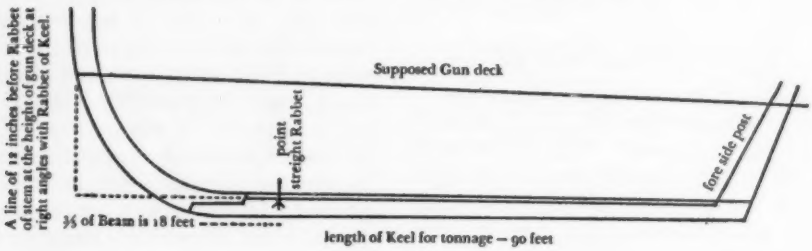
Breadth of Beam was ascertained from the outside to outside of the timbers – or the Moulded Breadth at dead flat or widest part of the Ship or from inside to inside of the plank or Wales at the same place, which is the same thing When the length of Beam is so found you take three fifths of its length which is allowed for the rake of the Stem, let the rake be what it may either more or less – but the rake is generally less – In order to assertain the point of straight rabbet on the Keel, you must set 12 inches before the rabbet of the Stem at the height of the Gundeck from that point let fall a line at right Angles with the rabbet of the Keel then Measure from that line 3/5 of the Beam & wherever that distance terminates on the Keel is the point called straight rabbet & from which to the rabbet of the stern post is the length of Keel for Tonage Carpenters measure of this Port – then Multiply the length of the Keel so found by the Breadth of the Beam as above & that product by half the length of the Beam – which last product divide by ninety five which will give the Number of Tons required.

Suppose a Vessel of 90 feet Keel & 30 feet Beam, the hold nor the height between decks not being taken into View

| | |
|---|---|
| 90 | Keel |
| 30 | Beam |
| 2700 | |
| 15 | half Beam |
| 13500 | |
| 27 | |

95) 40500 ( 426 30/95'

A letter in the William Bell Clark Collection dated 16 December 1793 from Humphreys to Col. Samuel Hodgdon shows the same rule was in use in Philadelphia at that time.




In actual practise the two kinds of tonnage for the same vessel worked out as follows:[4]

Custom house surveyor's certificate dated 16 January 1799 for the brig *Paragon* gives the length as 77 feet, the breadth as 23 feet, the depth in hold as 10½ feet and the tonnage as 160 75/95.

Samuel Crispin, the master carpenter made out his certificate for the same vessel on 22 January 1799, giving the following dimensions: length 60 feet straight rabbet, beam 22 feet 5 inches, depth 10½ feet. The tonnage resulting from these figures is given as 149 20/95.

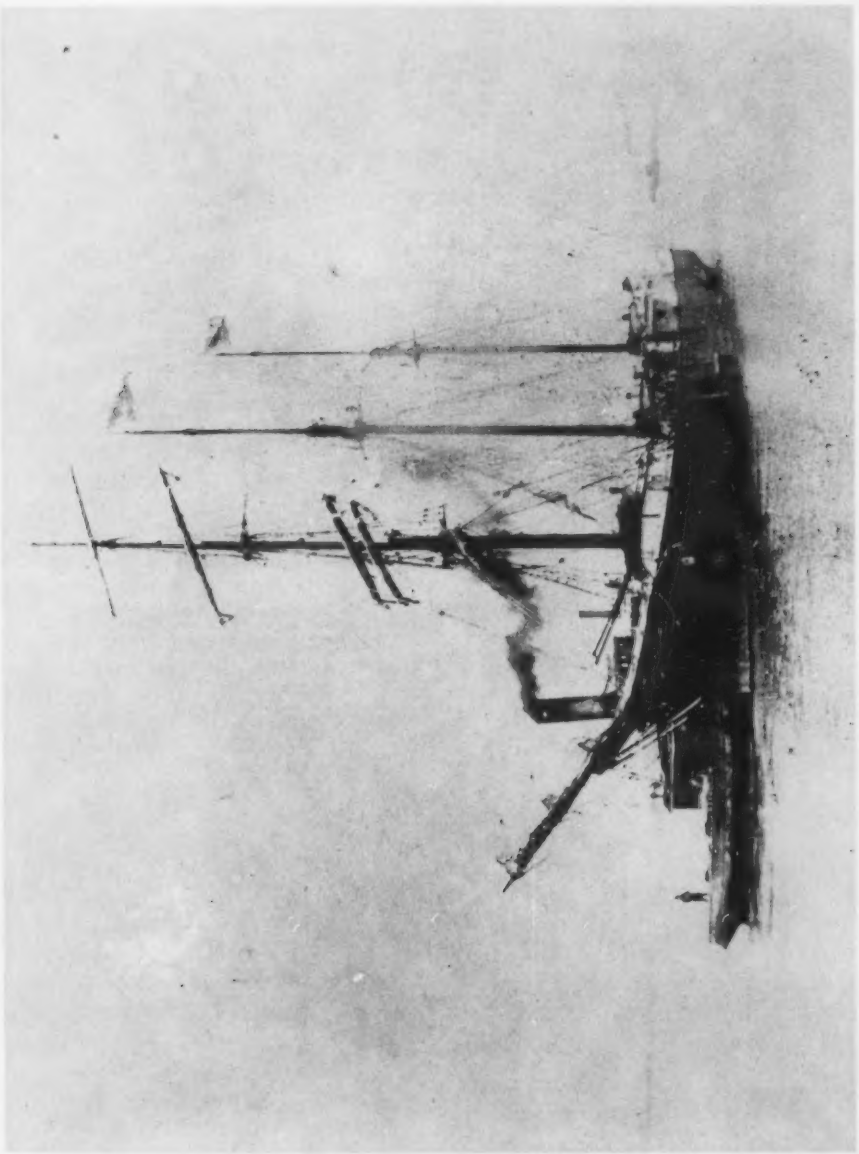
It would be interesting to compare the rule of other localities and periods if any are known to our readers.

M. V. BREWINGTON

## Pacific Codfishing Records

The 345-ton barkentine *Fremont* of the Union Fish Co., San Francisco, built as a steamer at Philadelphia in 1850 and converted to sail in 1861, was engaged in the Bering and Okhotsk Sea salt cod fishery from 1877 to 1910, and on her 34 voyages caught 5,800,000 fish. This record was exceeded in 1937 by the 468-ton three-masted schooner *Wawona* of the Robinson Fisheries Co., Seattle, built at Fairhaven, Calif., in 1897. She entered the Bering Sea fishery in 1914 and has been engaged in it ever since with the ex-

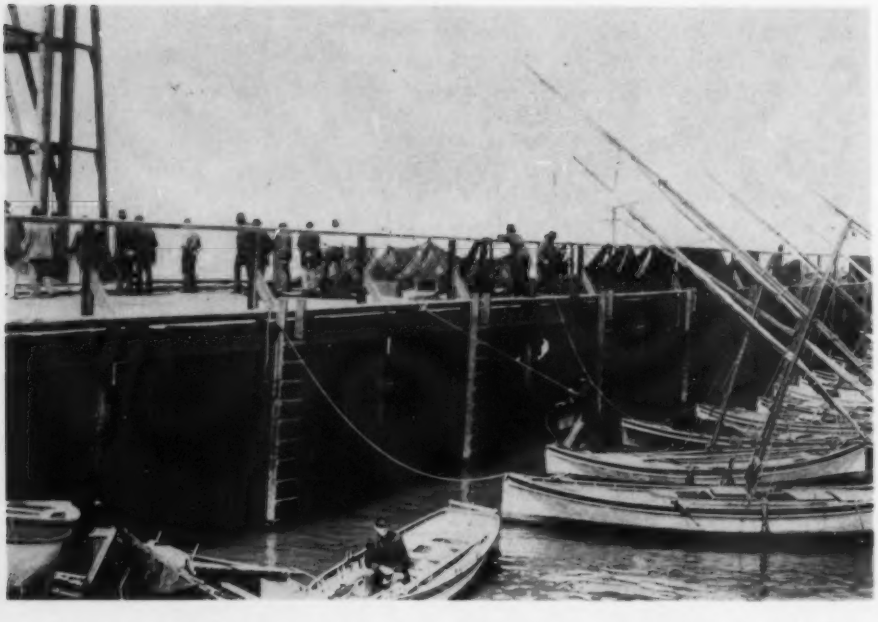
[4] Philadelphia Custom House Records.



Barkentine *Fremont* of the Union Fish Co., San Francisco, built as a steamer at Philadelphia in 1850 and converted to sail in 1861

*Reproduced from a photograph owned by Edward Strong Clark.*

San Francisco Bay latten-rigged fishing boats *Duilio* and *Italia*



San Francisco Bay lateen-rigged fishing boats tied up at 'Fisherman's Wharf'
*Reproduced from photographs owned by Edward Strong Clark*

ception of the year 1921. To the end of 1940, *Wawona* had landed 6,830,000 fish, which is claimed as a record for any salt-bank fishery in the world. These fish run about four pounds as landed.

On her twenty-seventh voyage, *Wawona* left Seattle for the Bering Sea in April, 1941.

A photograph of the barkentine *Fremont*, from the collection of Edward Strong Clark, is reproduced on Plate 9.

J. LYMAN

## More American-built Liverpool Vessels

The Shipping Registers at the Liverpool Custom House contain the following record of ships built in America, which were owned and registered at Liverpool between 1744 and 1756, in addition to the record of ships built at Newburyport which was published in The American Neptune, I (1941), 167.

*Old Noll*, hack-sterned ship, 250 tons. Built Norfolk, Va. 1743. Registered Liverpool in names of 28 Liverpool merchants 1744. Master: James Powell.

*Cleveland*, brigantine, 80 tons. Built Massachusetts 1743. Registered Liverpool 1744. Master: John Robinson. Owners: John Rowe, of Boston. Hugh Mathews, John Entwisle. Captured by French 1746.

*Wynstay*, schooner, 40 tons. Built Elizabeth River 1742. Registered Liverpool 1744. Master: James Carroll. Owners: Thos. Rawlinson, Thos. Seel, Thos. Seel Jr., Sam Seel, Robert Seel, John Knight, Jas. Pardoe, Mungo Campbell, Hugh Dale, Wm. Topham.

*Penelope*, brigantine. Built Boston 1744. Registered Liverpool 1744. Master: Pat Allen. Owners: Robert Hesketh, Arthur Heywood, Richard Milnes, James Milnes, and James Crosbie.

*Byrne*, ship, 80 tons. Built Maryland 1740. Registered Liverpool 1744. Master: William Boats. Owners: Thomas Seel and John Knight.

*St. George*, square-sterned brigantine, 50 tons. Built Maryland 1736. Registered Liverpool 1745. Master: John Grayson. Owners: Robert Hallhead, Wm. Whalley, Richard Nicholas, John Welch, Peers Legh, Robert Clay.

*Thurloe*, square-sterned snow, 70 tons. Built Rhode Island 1742. Master: William Bootle. Owners: Wm. Bootle, Jos. Manesty, John Bostock, Charles Goore.

*George*, brigantine, 45 tons. Built New England 1742. Registered Liverpool 1745. Master: Robert Makin. Owners: Geo. Campbell, David Agnew, James Ross.

*Rossindale*, snow. Built Portsmouth, New England 1741. Registered Liverpool 1745. Master: Evan Jones.

*Three Friends*, ship, 60 tons. Built New England 1741. Registered Liverpool 1745. Master: Hugh McQuoid. Owners: Thomas Lowe, of London, David Agnew and others.

*Greyhound*, square-sterned snow, 70 tons. Built New England 1745. Registered Liverpool 1749. Master: Isaac Wakeley. Owners: Joseph Manesty & John Okill.

*Allerton*, square-sterned ship, 100 tons. Built Philadelphia 1748. Registered Liverpool 1749. Owners: John Hardman & James Wallace.

*Herring*, snow, 100 tons. Built New England 1752. Registered Liverpool 1753. Master: Timothy Wheelwright. Owners: Thomas Johnson and others.

*John*, snow, 70 tons. Built New England 1745. Registered Liverpool 1756. Master: Josh Young. Owners: Roger Fisher, John Hart, Thos. Turner, John Ashton.

*Ellis*, snow, 60 tons. Built New England 1751. Registered Liverpool 1756. Master: Arthur White. Owners: Richard Watt, of Kingston, Jamaica, Richard Savage, of Liverpool and George Nelson, of Manchester.

*North Pole*, schooner, 40 tons. Built Elizabeth River 1754. Master: John Graham. Owners: Jno Brooks, Jos. Brooks, Ralph Earle, Charles Dingley.

The *Old Noll* and the *Thurloe* were famous Liverpool privateers.

ARTHUR C. WARDLE

## John Adams of Pitcairn's Island

John Adams, who used his real name, Alexander Smith, until after Captain Mayhew Folger's visit to him in the *Topaz* in 1808, was the last survivor on Pitcairn's Island of the mutineers of the *Bounty*. The *Dictionary of National Biography* states that he was born about 1760 and died in 1829. The *Boston Herald* for 9 June 1937 has the surprising news that Smith was born in the present Rockport section of Gloucester, Massachusetts, 23 February 1764 and went to England in 1783; and that 'James Norman Hall, co-author of *Mutiny on*

*the Bounty*, has confirmed the findings of the curator Foster H. Saville.' That also is surprising.

The eminent antiquarian of the North of Ireland, Mr. Sam Henry, printed in the *Northern Constitution* for 27 May 1939 three columns on John Adams, with illustrations. This newspaper, the best in Coleraine, and one of the best anywhere, asserts that Adams was the son of James Adams and Nannie Smith of Enagh, County Derry. John was born, Mr. Henry says, in 1767, of a seafaring family, went to England, and took the name of his uncle Alexander Smith.

Mr. Henry identifies John of the *Bounty* with John of Enagh in several ways. John 'sent a letter home partly in verse (a talent that pertained to the Adams family). He put into the mouth of his Tahiti wife the words:

I love to see my baby wear
Your light blue eyes and sunny hair.

Blue eyes are even yet a characteristic of the Adams clan.'

Another clue is in the naming of an Adams baby at Norfolk Island to which the Pitcairn colony migrated for a brief period. He was called Absalom Caleb Tully Adams, obviously related to the fact that James, so-called nephew of mutineer John, left Enagh to settle in the near-by hamlet of Tully in Ireland. Also, says Mr. Henry, Adams taught the Islanders to make 'sowans,' which 'almost in itself is a proof of Ulster or Scottish origin.' Sowans is a porridge made from oat husks. No one will deny that Adams may have had relatives in Ireland.

Mrs. J. F. McGowan of Pittsburgh wrote to Dr. H. L. Shapiro, author of *The Heritage of the Bounty*, that her ancestor Alexander Smith lived in County Armagh, Ireland, 'until he deserted his family,' and she 'doubts that he ever saw London.'

From 1790 to 1808 several ships sighted Pitcairn's Island and passed by. It is well known that Captain Mayhew Folger in the ship *Topaz* visited the Island in February 1808; and in September 1814, Sir Thomas Staines in the frigate *Briton* and Captain Pipon in the *Tagus* called at the Island.

The mutineers, except Adams and Edward Young, had been killed by the native men from Tahiti, who were in turn destroyed by the Tahitian wives of the white men; Young soon died, and Smith, wounded, survived to live for many years with the widows and children about him. He was the patriarch from whom the survivors obtained all they knew of European religion, education, and civilization. Out of the welter of mutiny, rioting and murder he brought piety and peace. He preached three times every Sunday and offered extempore prayers. It is recorded that Mr. Adams's sermons were a bit dull because he repeated the main theme a second and a third time in order to drive home his thought. He taught the children, although his knowledge of spelling was pitifully limited. I doubt, however, if Dr. Shapiro is correct in saying he could not write until old age.[1]

In September 1819, the ship *Sultan* came into Boston harbor. Her captain was Caleb Reynolds, her first mate George Newell. At this time Samuel Topliff, proprietor of Merchants Hall, was the chief New England distributor of news, and is still called the forerunner of the Associated Press. When word went forth that the *Sultan* had stopped at Pitcairn's Island Mr. Topliff interviewed members of the crew. The captain had gone to his home at Dighton and had placed 'everything he knew' in the hands of Captain Amasa Delano, the Hakluyt of his day. This material has not been found, but may still exist. Mr. Newell had sailed in the *Cordelia* for Canton, but left his sea journal with his family. Mr. Topliff borrowed this journal and copied everything relating to the Island.

The *Sultan* hove to off the northern end of the Island on 17 October 1817 at

[1] See Shapiro, op. cit., p. 163.

5 P.M. A small village[2] was seen in a grove of cocoanut trees and Newell manned a boat to investigate. The natives came out in a canoe; he talked with them but did not land. The night was boisterous and the *Sultan* stood off to sea to the eastward. On the eighteenth the crew 'turned out the reefs and got up the top gallant yards.' By 11 A.M. they were at the southeast end of the Island. Newell went ashore and came away with a load of yams and hogs, bringing Mr. Adams with him.

On the nineteenth the ship was at the 'S.E. part' of the Island at 7 A.M. and the jolly-boat was sent in for vegetables. The village which they reached at 9 A.M. was situated on a small enimence overlooking the sea. It had six dwelling-houses, outhouses and sheds, with plots of cultivated ground. There were enclosures for the hens, pigs and goats. Outside these were plantain and banana trees, fields of tarro and the tea root. At that time Adams's house consisted of two rooms, and the windows had shutters to pull to at night. To fashion such a house small trees were cut into suitable lengths; these were driven into the earth and interwoven with bamboo. The house was then thatched with the leaves of the plantain and cocoanut. Clothing was made from the bark of the mulberry or 'cloth tree.' Adams's house was on the upper end of Pitcairn village, occupied by him, his blind wife, three daughters, a boy, a daughter of his wife by a former husband, and a son-in-law. On the opposite side was the home of Fletcher Christian's son Thursday October Christian, with 'a smooth verdant lawn' between, on which the poultry fed. At this period Adams was called 'Aleck' by young and old. His religious teaching was shown by the devout behavior of the group whenever they came in contact with visitors. All their education they owed to Adams, and his attainments may be judged by the quotations from his own writings which follow. He was a great reader and a good talker. In 1808 Folger had told 'Aleck' of the career of President John Adams, and Alexander Smith took his name. One would expect that Thomas Jefferson, then in office, would have been his choice, but Folger's political opinions may have led him to praise Adams rather than Jefferson.

Captain Reynolds on the twentieth gave to Adams his jolly-boat in return for food which he had received and for copper bolts salvaged from the *Bounty*; he then sailed away to the island of Massafuero.

When the *Sultan* left Pitcairn's Island she carried an old woman 'who had neither husband nor children, nor anything else to attach her to the Island.' This woman had on her left arm this mark 'A.S. 1789,' done by Smith to whom she was at first attached. She was set ashore at Nooaheevah on 31 May 1818. Her story was reprinted from the *Sydney Gazette* for July 1818, by the *London Morning Chronicle* of 26 November 1819, and by the *Boston Daily Advertiser* for 19 February 1820. Another wife (or perhaps his only real wife), Obuarei bore several children.

Mr. Downs, the second officer of the *Sultan*, told Mr. Topliff that Adams was elated when he came on board; he pulled the rigging and sang several songs. He was a 'fat, stout man, with a bald head; his beard had been extracted.' Adams gave the Captain two blank books which he had taken from the *Bounty*, and one of these was presented to Mr. E. A. Greenwood of the New England Museum on Court Street. In this book there are four attempts by Adams to write a history of his life. Mr. Downs, who had met the mutineer, assured Mr. Topliff that these efforts were in Adams's handwriting. Two of them are given in full below, and the reader can readily see why the mutineer's first request from Captain Reynolds was for a spelling book.

[2] I do not know what this village was. Possibly huts for men engaged in fishing or salt evaporation. It could hardly have been Adamstown which is on the southeasterly side of the Island.

The first attempt at an autobiography reads:

'Alexander Smith Elias Adams, I was Born at Stanford Hill in the parrish of St. John Hackney Middellsex of poor But honest parrents My father Was drouned in the Theames thearfore he left Me and 3 More poore Orfing But one Was Married and o[ut?] of All harmes.'

In another part of the book Adams writes:

'The life Of John Adams Born November the 4 or 5 in the year Sixty Six att Stanford Hill in the parish of St. John Hackney My father Was Sarvent to Danel Bell Cole Marchant My father Drowned in the River Theames.'

These statements seem to settle the date and place of the birth of John Adams, facts unknown to the writer of the article in the *Dictionary of National Biography*. Adams, according to the Pitcairn gravestone died 5 March 1829, 'aged 65 years.' He was actually 63.[3]

[3] The original muster roll of the *Bounty*, published in *The Mariner's Mirror*, XXII (1936), opposite p. 212, states that Alexander Smith, born in London, entered the ship 7 September 1787, and was 20 years old at the time of entry.

Mr. Topliff's account of the *Sultan's* voyage was issued as a broadside by the *New-England Galaxy*. It is not dated, but several legal notices are inserted in the right hand column; the latest of these is dated 15 January 1821.

In 1849 forty-nine ships visited Pitcairn's Island, an average of nearly one a week. Captain Delano, our long forgotten Hakluyt, must have had a vision of the future when he wrote in 1817:

'It is painful to look forward to the time, when the interesting family of Pitcairn shall lose their present innocence and loveliness, by the frequent visits, which they must be expected to receive from ships. . . . To send missionaries among them, according to the proposal of some good people, would be an unfortunate experiment upon their peace and virtue, unless the individuals selected should be much more enlightened and liberal than any of that class of persons with whom I have been fortunate enough to be acquainted.'

CHARLES KNOWLES BOLTON

# Documents

## Two Prize Masters from the Baltimore Privateer *Lawrence*, 1814

The exploits of American privateers during the War of 1812 have received much attention, and the journals or logbooks of various private armed schooners have been printed or quoted at length. Not so well known are the stories of the prize crews which took over the ships captured by the privateers and conducted them to port for sale. It is especially interesting, therefore, to discover among the papers of the schooner *Lawrence* of Baltimore in the Maryland Historical Society documents dealing with the adventures of two of the prize masters from that vessel.

The first item is a letter from John Clark, written 31 May 1814 from prison in Halifax to Richard H. Douglass, merchant, who served as agent for many of the Baltimore privateers. It describes the capture by the *Lawrence* on 18 April of the British schooner *Ontario* laden with cork, salt, and wine. It pictures vividly the succeeding five weeks during which Clark attempted to take the *Ontario* through hostile waters to an American port. It narrates the unfortunate recapture on 25 May by the British sloop *Curlew* while within a day's sail of Portland, Maine.[1] It affords a first-hand glimpse of the gloomier side of privateering.

More cheerful is the journal kept from 22 April to 3 June by Isaiah Lewis, who sailed the British brig *Pelican* to a harbor near Brest in France. The voyage to shore took only four days and was accomplished without difficulty. Then Lewis records the discharge of the cargo of sugar, cotton, and logwood, together with his troubles with the members of the crew. The successful conclusion of all these affairs may be gathered from John A. Morton's letter of 16 July to Douglass, also among the papers of the *Lawrence*. Morton, who acted as agent for the Baltimore privateers in France with headquarters at Bordeaux, said the *Pelican* and its cargo were sold just two hours before orders arrived from Paris prohibiting the sale of all American prizes, and he estimated the probable proceeds at $100,000 or $120,000.

The *Lawrence*, mentioned as 'one of the successful privateers of the war,' was commissioned 24 February 1814 under the command of Edward Veazey. She was a vessel of 259 tons, mounted nine carriage guns, and carried 120 men.[2] She sailed from the Chesapeake early in March and cruised the seas until the end of July, capturing twenty-two merchantmen, including eight from the St. Thomas fleet. Clark's letter and Lewis's journal are living documents from two phases of this voyage.

Mr Douglass. Sir,

it is with deep regret that I acquaint you of my unfortunat sitiwation here; with hurt felt feelings to relate for it; we left C. Henry the 12th march; the 13th April captured a Sweedish ship from Limbreek for Bilboa with military stors expresly for his majestyes forces; ordered her for a Northern port in the U. N. states; on the 18th april captured the British ship *Ontario* from Elicant for Greenock with 100 tons salt 150 pips red wine & filled up with calk [cork]; the 19th investigated her for the U. N. state under my charge; with Mr Jacob Curl

[1] See G. F. Dow: *American Vessels Captured by British* (Salem: Essex Institute, 1911), p. 144.

[2] Copy of the commission, number 968, among the papers of the *Lawrence* in the Maryland Historical Society, Baltimore. Extracts from the log of the *Lawrence* are quoted in J. P. Cranwell and W. B. Crane, *Men of Marque* (New York: W. W. Norton & Co., 1940), pp. 276-278.

as mate of the prize with 3 seamon & five green boys & 3 Sweeds from the ship & 3 British prisenors – on the 22nd I succeeded in ascaping from a brig war; on the 27th spook a British Letter marque of 8 guns from Havanna for Liverpool 7 days from convoy; seliseted him to report me being 8 days out. I succeeded in two severe chases one brig war the other a ship. the 5th may was boarded from privateere brig *Scurge* N. York bound home capt Penny [Perry] funnished us some coffe & sugar & a general chart; on the 9th succeeded in a sevear chase at 1 mile distance at dark of a brig; on the 10th before day Light was taken prisenor by Jacob Curl James Smitin the Sweeds & the 3 British that all my people had revolted & the ship was thiers bound me & cast me into run the & fastned it down; but I soon heard two of my people Michel Nobertson & Jeremiah McDonald contending bravely & broak Loos assended the cabent obtained my arms sprung on deck & by that time the ship was ours again cald the green boys up plased them on sentenel & secured the prisenors easy wore ship & proseeded to the westward again on the 24th was all day in company with large British convoy. I saw many sail standing to East till I past Novascotia; most every other day some times every day on the 25th May was captured by the British sloop *Curlew* in Lattd 42°-26′ N-& Long 65°-50′ west with in 22 hours Sail Portland harbour; here these vilens got their Liberty Mr Jacob Curl & James Smiting owning themselves to be Englishman & wanted to serve thire king; but I pervented them all I could posable. Curl was not entred when I was moved to prison I have been here 4 days & cannot see nor here a word from the American agent nor no person to git a word to town by; but hope I shall soon see or hear from the American agent I am very retchedly sitiwated here. Brig *Curlew*, ship *Martin*, ship *Vengen* & Brig *Uster* have Shares in our Prizes.

This ship *Ontairo* was formaly the *Pocahuntras* of Boston; indiaman; we ware taken the same day by the same squadrent that the *Two Brothers* was bark prize to the *Scurge* N. York 48 days & Brig *Tho* & *Sally* 44 days prize to the *Grand Turk* Salem 46 to day a brig prize to the *Scurge* arived – all nearly in one tract between Cape Sable & Georges Bank. Sir, I know no other information to convay to you unless it ware better; this solatary place is very bad to rite in five or six times in an houre at Least moved or disturbed among 12 or 13 hundred prisenors crouding & gambling & other past times keeps every thing in confution. constantly

Sir I Remain respectfully Your Obd H. B. L. S &c

JOHN CLARK

Melven island, Halifax, the 31st may ano ano 1814

II

A Jounal Kept By Isaiah Lewis Prize marster on Board the Brigg *Pelican* taken By the Privater *Lawrnce* of Baltimore, Edward Veazey Comander. on the 21 of April in the Latt 51-00 N. Longitude 11-00 W. and orderad for the first port in Francs – togearther with four men and S. H Lagstrom being as mate . . .

April th 22 1814 – All these 24 hours fresh winds from the NWBW. Cours steard By Cumpass SSE. at meridan Latt By Obs. 49-48 Long. 9.10

April th 23 – All these 24 hours strong winds And Cloudey. No Obs – our Cours Steard SE½S. we made 85 milds By the Logg. so Ends –

April th 24 All these 24 hours fresh winds from the NNW. Cours steard S.E. at 8 AM. We saw Ushant Bairing SSW. and one Frigate one Brigg Bairing NNE made all sail and stoo for the Land so Ends –

April th 25 At 2 PM we saw a large sail To the South which we took to Be A Frigate at 3 we took a Pilot. at 5 we Anchored in Conque But was not pirmeted To go on shore. No person Could Speek Emglish hear. so Ends –

April th 26 – At 1 pm the Viset Came on Board Togeather with Mr Jacklo the Counsel At Brest. after was primited to go on shore. and forwood may Letters to Mr Molton [John A. Morton] at Bordeaux So Ends –

April th 27 – I was oblege to go to Brest to Sign the Diclralation –

April th 28 – fine weathr and all well –

April th 29 – fine weath and all well

April th 30 – I Returnd from Best –

May ♯ 1 All well –

May 2 1814 This day having no moat or [meat on ?] Board and a little moldey Bread I was oblege to get meat and Bread From the shore – nothing more untell The fifth –

May 5 This day Came Joseph Cross to me and demanded. I told him I hed none for him he drawed his Knife I gave him thrashing – after Sum dispute took plase Betwene And A Black man By the name of Brooks. Joseph Cross stabd Brooks And the wound is dangerest. I Then Put Cross intro Prisen.

May 6 Brooks Remains speechless –

May 7 This day I sent Joseph Cross to Brest and delivard him up to The Counsal –

May 8 This day Brooks is a little Reviveed Nothing more untell the 14 when Brooks's Wound Brook loos and he all But Expired Befour we Could stoop the Blood –

May th 15 The Doctor Came and drest Brooks's Wound –

May th 16 This day we Brook the Seals and Opened the haches and Began to discharge – we landed 64 Boxes of shugar 9 Bails of Cotton 240 Peases of loogwood –

May th 17 This day I sent Brooks to Brest to the horspitle – we landed 84 Boxes

May th 18 This day we landed 100 Boxes 210 peases of loogwood

May th 19 This day we landed 65 boxes and 240 peases of loogwood. and that made a finish of all the Cargo –

May th 20 This day I was oblege to go to Brest to give a Count of my Cargo. on the same day Vanmeader Stole all the sugar that was in The Caben for the vessels youse and Sold it –

May th 21 All this day havey Raign I Could not Retunn –

May th 22 This day at 10 I Returnd. finding That Vanmeader hed Stole every thing That he Could and hed Run away The Counsel was hear. I told him That If he saw Vanmeader to send Him hear or put him in Prisen To provent him from geting in debt As I would not pay one sent. and If he did not do the same it would Causs sum disturbancs in Brest –

May th 22 This day we was oblege to leave The Vessel and go on shore, the Inspector would seal the haches Four and aft likewise the Caben Vanmeadear Arived hear again

May 23 Nothing Ocurd this day. still waiting To hear from Mr. Bass, who is Agent for Mr. Morton –

May 24 This day Mr. Bass Arivd at Brest

May 25 Still waiting for Mr. Bass –

May 26 Still waiting the arrival of Mr. Bass

May th 27 1814 Nothing more Remarkable. still Waiting the Arival of Mr. Bass or Letters –

May th 28 – may th 29 – this day Mr. Bass Arived and ordered me to stay Hear untell the 2 of June as that Was the day of sail. and myself in A Bad state of helth haveing Ben Oblege to Keep my Bed for sevral days Past. nothing more untell the 2 of may [June] when Mr. Montrrily a Partner of Mr. Mortons Came hear And the sail took Plase and all Was sold. at 3 oclock he left this Plase For Nants – so Ends –

June th 3 1814 This day I found whare that Henry Vanmeader. hed sold 50 – or 60 lb of shugar at one plase. Besides what He hed sold at sevral otherr plases –

*Contributed by William D. Hoyt, Jr.*

## Navy Boards Report to the Admiralty on the First Coppering Experiment

[William L. Clements Library, Ann Arbor, Michigan]

31st August 1763

Sir

His Majesty's Ship *Alarm* whose bottom has been covered with Copper for an experiment of preserving it against the Worm, and this Ship being returned from her Voyage to the West Indies to Woolwich, and that We might examine her bottom, and be informed how far the Experiment had answered the intention; We sent directions to Our Officers there, to take an immediate Survey of the State and condition of the Copper, also an Account of the number of Plates that might be rubbed off; and the number that should be continued on, and to distinguish such as were in a State of decay from those which should appear unimpaired, to examine likewise with regard to the Copper being Clean or foul'd with Barnicles, Weeds, which usually collect and grew upon the bottom of Ships in long Voyages, and in case of finding any of the Plates rubbed off, to observe the effect the Worm had on that part. They were then to cause all the Copper that should be remaining to be carefully taken off and collected: And these several Injunctions being complied with, they were strictly to inspect the Ships bottom, and report their Observations, as well on the Heads aforement'd as on every thing else that might occur in the course of their examination: And having received their report, We send you enclosed a Copy thereof with a profile sketch of each side of the Ship, shewing the manner in which the bottom was at first covered, the part that remains so, and also that which was found uncovered when the Water left her in the Dock; all which We desire you will please to lay before the Rt. Honble the Lords Commissrs of the Admiralty, for their information.

And their Lordships having directed Us on the 21st October 1761, to report Our remarks upon this Experiment, We beg you will upon presenting the Sketches, observe that the Copper is most deficient upon the Bows; from thence ranging Aft a little beyond the Midships, and for four or five Strakes under the surface of the Water all which parts are most exposed to the force of the Sea. Upon discoursing the Officers on board the *Alarm*; We find the Plates began to wash off from the Bows in fifteen or sixteen Months, after She sailed, gradually wasting in the middle, till reduced to the substance of the finest paper, and too thin to resist the wash of the Sea; the Edges and fastenings only remaining as when first put on.

The Plates upon the lower part of the bottom also in the run of the Ship, quite Aft (except a few whose defects can be imposted to Workmanship), are wasted very little.

In two hundred superficial feet that were taken from these parts and Weighed, the Plates were found to have wasted in Twenty Months only 13lb 12oz which seems to confirm that the quick Waste of those *Plates* laid on the Midships forward, can only be from the Wear occasioned by resistance of the Water to those parts. We are further to observe that the Copper which was remaining upon the bottom had been on near twenty Months and had kept perfectly clean without any means whatever having been used to render it so. But the Copper which covered the Rother was foul'd with Barnicles; and this difference We cannot Account for unless it may be supposed, that the Plates there being fastened with Iron Nails which was done to vary the Experiment the rust from thence with what might come from the Straps of the Pintles, draining down and spreading the surface of the Rother should have occasioned it.

The Copper being every where taken off the Plank of the bottom was very carefully examined, so likewise the

Caulking, and in neither was there found the least Impair from Worm or any other Cause. The Plank was entirely sound, and the Seams and Butts were full of Oakam, hard and good, except upon one Spot on the Starboard side, distinguished on the Sketch by a red Circle, where the Copper for about a foot diameter being rubbed off the Plank was covered with Barnicles as close as it was possible; and upon inspection it was found the Worm had then made a deep impression.

The Copper upon this Spot, We apprehend must have been rub'd off very early, probably before the Ship went out of the River, as in all other parts of the bottom where the Copper had remained till gradually worn away as before described, the Worm had but slightly gribled the Surface, which plainly shews that it was owing to the Copper only that they were preserved from being in the same Condition.

We were greatly surprized to percieve the Effect the Copper had had upon the Iron where the two Metals touch'd; but it was most remarkable at the Rother Iron and in the fastenings of the false Keel, upon the former, the Pintles and Necks of the Braces were as coroded and Eat. – particularly the two lower Ones, that they could not have continued of sufficient strength to do their Office many Months longer, and with respect to the false Keel it was entirely off.

The loss of the false Keel was at first supposed to have happened from the Ship having been on Shore, but upon examining it, the Nails and Staples that fastened it were found dissolved into a kind of rusty Paste; which was also the Case of every Nail that had been used in fastening on the thick Lead to the Gripe and fore part of the Knee.

The same effect, but not to so great a degree; was observable upon all the Bolts and Iron under water, except where brown Paper (with which the bottom was Covered) remained undecayed, and thereby separated the two Metals; and where this Covering was perfect, the Iron was preserved from Injury.

Having now informed their Lordships of the most material Observations We have made upon this subject, We shall observe upon the whole.

1st. That as long as Copper Plates can be kept upon the bottom, the Plank will be thereby entirely secured from the Effect of the Worm.

2nd. That neither the Plank or Caulking received the least Injury with respect to its duration, by being covered therewith.

3d. That Copper bottoms are not incident to foul by Weeds, or any other Cause.

All which are Advantages very desireable to be Attained, provided Methods could be fallen upon to obviate the difficulties we have before pointed out; the greatest of which is, the bad Effect that Copper has upon Iron.

It has been shewn that where brown Paper continued perfect between them, the Iron was not injured; whence We presume, if the Heads of the Bolts and other surfaces of Iron were covered with flannel and a very thin leaf of Lead, they could be better secured from the corosion of the Copper, and with respect to the Rother Irons, if the back and sides of the Stern Port and sides and beardings of the Rother were also covered with thin Sheet Lead instead of Copper, the effect that has appeared upon the Pintles and Necks of the Braces would be kept at least a greater distance and though We doubt it would not answer the end of entirely securing the Rother Irons, and it might lengthen their Service beyond the hazard of failing within a three Years Station.

As to the difficulty about the false Keel, that may be got over by having all the Staples made of Copper.

There is still another difficulty which is the Accident that Copper Sheathing has been found liable to in the Course of this Experiment, but as We imagine

these have been partly owing to the thinness of the Plates made use of, which were only twelve Ounces to the foot, it appears to Us this difficulty would be removed by adding to their substance; which would render the Plates stiffer, not so liable to rub off, and also consequently of greater duration, with respect to their Wear.

We must not in Our Observations to their Lordships upon this subject forget the Expence that attends covering a Ships bottom with Copper; That upon the *Alarm* amounted to about £650. and to increase the Plates to the thickness that would be requisite to answer the aforementd Advantages and bring the Charge to about £945. which is at least an Expence of four times the cost of Wood; but when it is considered how much more durable Copper will be than Firr Sheathing, also the worth of the old Copper when returned, We are inclined to think the difference (if any) in the end will be immaterial, the intrinsic value of the Copper recd back from this Experiment is £199.15.9.

And having maturely considered all the Circumstances that attend the Sheathing Ships with Copper, and seeing the extensive advantages it is capable of; supposing it can be brought into Use, We are induced to recommend it to their Lordships consideration, — whether a further tryal may not be made of it, with the improvements We have mentiond And in Case a Ship of 32 Guns should be wanted on the West India Station, We would propose that the *Alarm* may be again made use of for the Occasion, All which is nevertheless submitted to their Lordships by &cª

JS. WB. HB. RO.

Philip Stephens Esqr

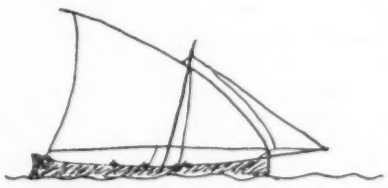
P.S. We have ordered a Box to be sent to their Lordships containing several Plates in their different degrees of Wear.

*Contributed by Dorothy R. Brewington.*

## Henry Hall's Notes on San Francisco Bay Lateen-rigged Fishing Boats

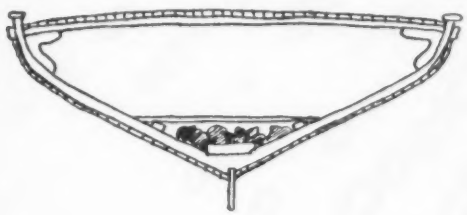
[Manuscript notebook *Ship Building in the United States*, pages 209-211, in Penobscot Marine Museum, Searsport, Maine.]

San Francisco. Nov. 9, '81. A catamaran, afloat in the water here, looks like a big spider. The place for the passengers is an ellipse, a flat deck, with a wash board a foot high and a light rail on stanchions atop of it; and this spiderlike body rests on six long legs which project sideways and then downward and rest on the two sharp hulls. The hulls are like racing shells, about 20 feet long, 2 wide and 1½ or 2 deep. About 12 feet apart. Deck body about 8 feet by 5. Mast at the fore end of this body about 30 or 35 feet high.



San Francisco. Nov. 12, '81. A large number of small fishing boats are used here, with a Spanish rig, which rendezvous at one place, with their nets, and bring in large quantities of small fish every day. They are sharp at both ends and sharp on the floor, with a keel 8" or 9" broad below the bottom of the boat. Some are extremely beautiful, having a deck plan of 3 x 1, Nystrom, and a midship section from the gunwales of 2 x 1, or 2 x 1.25. They have one mast, movable, leaning forwards, stayed by a cord each side, and a long fore & aft, three cornered sail, the boom at the top and hauled up by halliards. Some have a bowsprit. They carry about ¾ of a ton of ballast. They are decked, and have a long hatch in the middle for the nets, fish, and fishermen, and a queer little square hole in the deck at the stern, for the steersman to sit in. The boats are fast and safe. Four rowlocks on each

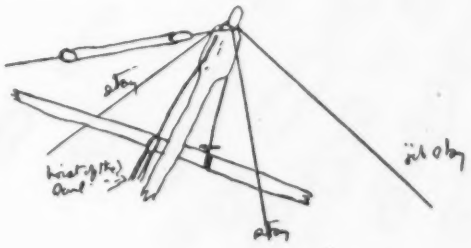
side. The hatches are always on, when the boat is not in use. This boat was measured from one rather sharper than the rest, on shore. Still, a very fair sample of them all. Deck plan, 3 x 1, Nystrom. Midship section 2 x 1.25. Dimensions, moulded, 22′ x 7½′ x 2½′. Keel 8″. Sheer 6″. Mast 10½ feet from stem. Mast



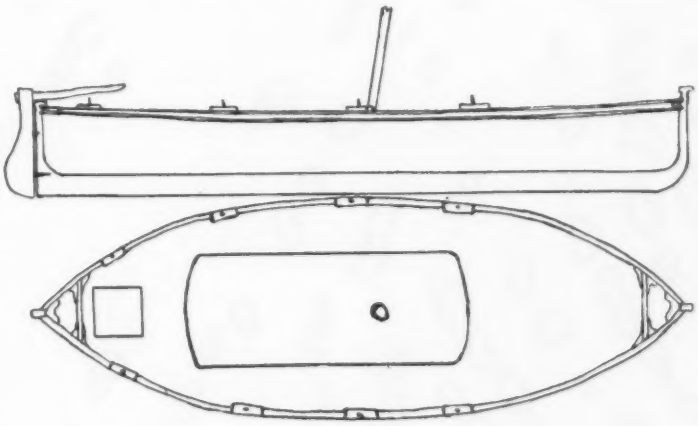
about 15 feet long. Boom, or sprit, whichever it may be called, about 30 feet. Bowsprit, 8 feet. Boom is suspended at 2/5 L. from lower end. The head of mast hangs about 3′ or 4′ aft of perpendiculars from bow. Jib not very large.

Memo. Some of these fishing boats are larger: 30′ x 10′ x about 4′. The large ones cost from $700 to $900. The mast is a strong one on the large boats and has a sort of head terminating in a point, the shoulder serving to support the several stays. The jib boom would be about 8 feet outboard, projecting parallel to the deck, through a hole in the little bulwark by the side of the stem. The jib comes back nearly to the mast. Several pairs of oars, a barrel for water, and a confusion of small things, boards, nets, etc., are carried in and on every boat. Clothes are hung up to dry on an oar, slung horizontally, the blade lashed to the mast, and the handle to the boom of the sail in front. The sail is trimmed crosswise of the boat before a stern breeze; fore and aft when the wind is on the beam. The boats all have hollow water lines.

Mr. Edward Strong Clark of San Francisco, who lent the photographs of these craft that are reproduced in Plates 9, 10 and 11, writes concerning them: 'Like the Chinese, the Mediterranean fishermen brought their own ideas of naval architecture with them to California.



The result was that "Fisherman's Wharf" in San Francisco was a miniature forest of lateen yards, and the picturesque Italian fisherman, dressed in



his native costume, mending his nets, was one of the most interesting spectacles of the city, and gave it a distinctly foreign aspect. These lateen-rigged craft were used for nearby shore fishing and crabbing, but were fast, weatherly craft that frequently had to stand some pretty heavy weather miles outside the Golden Gate. Plate 9 shows two hauled out on a beach, and gives an excellent idea of the fine lines and graceful curve of the rail. Plate 11 shows one under tied up at "Fisherman's Wharf." The photographs were taken about 1900.'

*Contributed by Lincoln Colcord.*

## SCHOONER *Richard R. Higgins* OF WELLFLEET

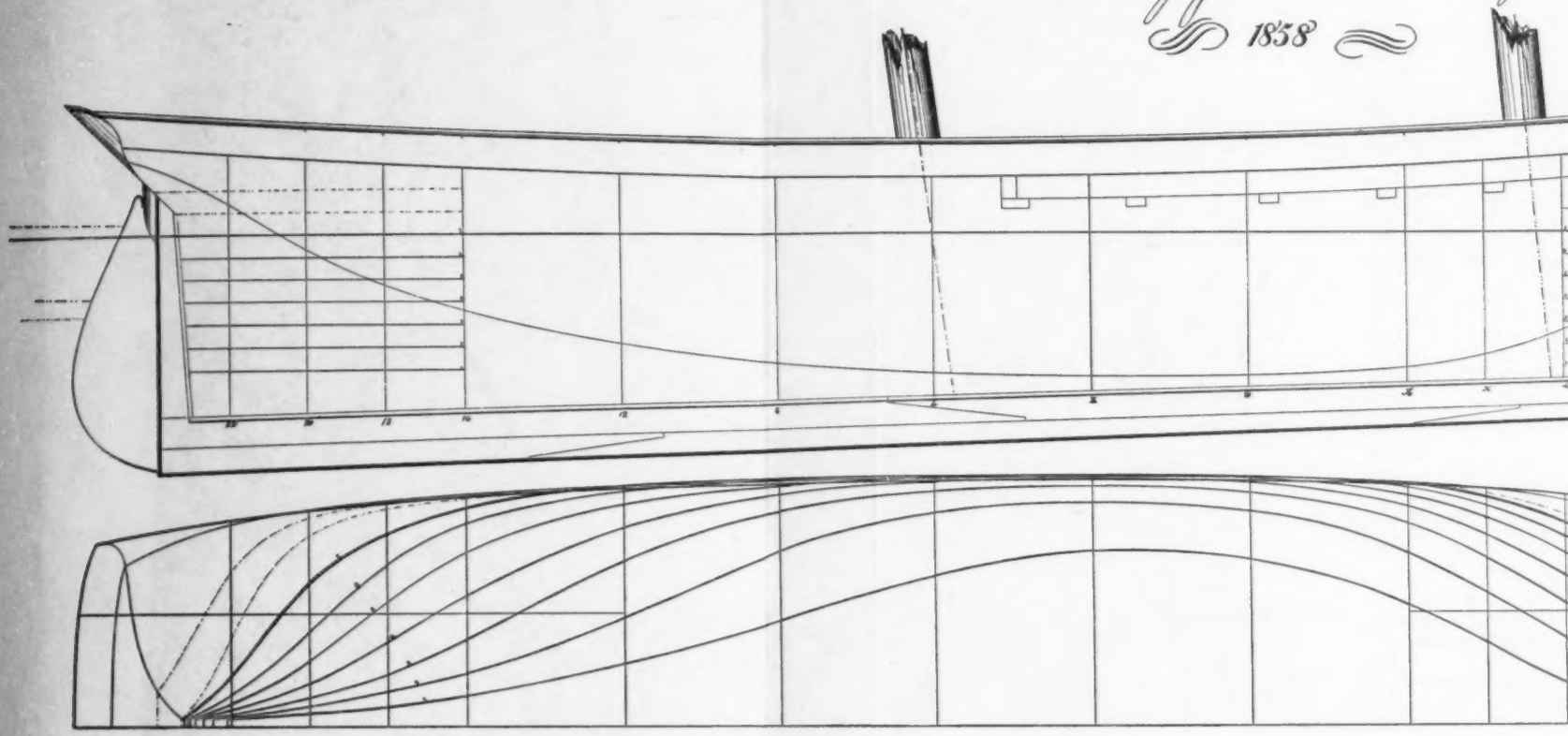
IN 1923 the Peabody Museum of Salem obtained by exchange from the German maritime historian Herr Hans Szymanski of Berlin a group of original plans and tracings of American sailing vessels, which Herr Szymanski had bought some years earlier from a German shipwright who had worked in Donald McKay's yard at East Boston in the eighteen fifties. Among these plans is a tracing of the fishing schooner *Richard R. Higgins* which was built at the McKay yard in East Boston in 1858, and was owned at and operated from Wellfleet, Massachusetts, until the early seventies. This tracing is reproduced herewith in two folding plates. Richard C. McKay states[1] that this schooner was built by Donald McKay's son, Cornelius W. McKay. The caption of the tracing attributes the vessel to Donald McKay himself, but as the same caption erroneously names the schooner *R. H. Higgins* its accuracy may be questioned. Richard C. McKay, in his list of vessels built by Donald McKay[2] gives the owners of the schooner as Ulrich, Mayo & Company of Boston, though the *American Lloyd's Registers* for 1861, 1864, 1867, 1868 and 1870 state that she belonged to Wellfleet and was owned by her captain and others.

[1] *Some Famous Sailing Ships and Their Builder Donald McKay* (New York: G. P. Putnam's Sons, 1928), p. 357.

[2] Op. cit., p. 373.

# Schooner R. H. Higgins Built by

1858



Half Breadth Plan

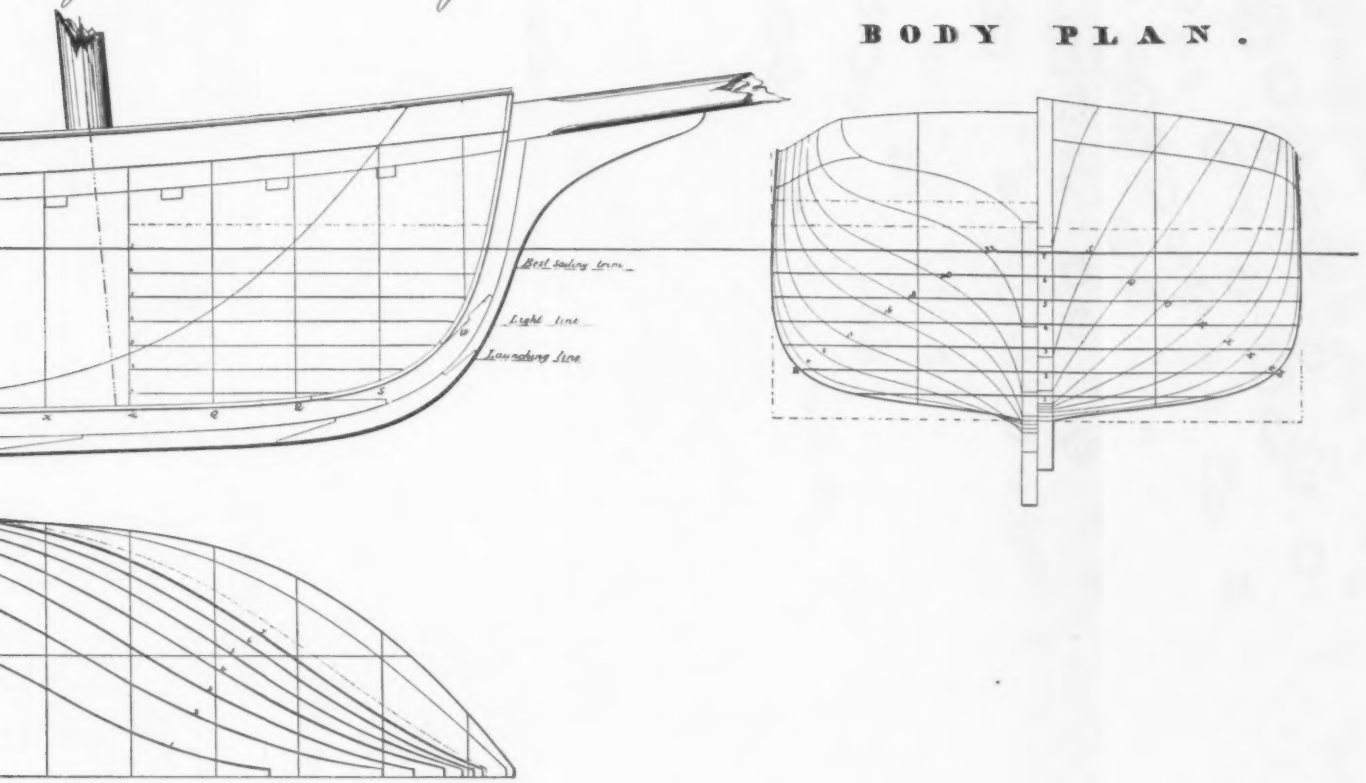
## Principal dimensions and results of calculation

| | | | |
|---|---|---|---|
| Length on Load line between inside rabbets | 70.50 feet | Center of Displacement aft of middle | |
| Breadth moulded | 22.00 " | " " Vertical Longitudinal Section | |
| Depth of hold from base line to straight line of beams | 8.50 " | Coefficient of Displacement | |
| " from Load line to " " | 7.00 " | " " Load line | |
| Draught of water aft | 10.50 | " " Midship section | |
| " " " forward | 7.75 | % of $g^3$ d x | |
| Displacement moulded | 190 Tons | Height of meter center above center of D | |
| Light Displacement | 34 " | Center " sail aft of middle | |
| Area of Load line | 1330 Sq ft | " " " above Load line | |
| " " Midship section | 133 " " | Vertical moment of sail | |
| " " Vertical Longitudinal Section | 768 " " | Area of Total Sail | |

Schooner *Richard R. Higgins* of Wellfleet, Massachusetts, built at East Boston, 1858. Reproduced from a

Scale: 1/8" = 1'

Built by Donald Mc Kay Boston Mass

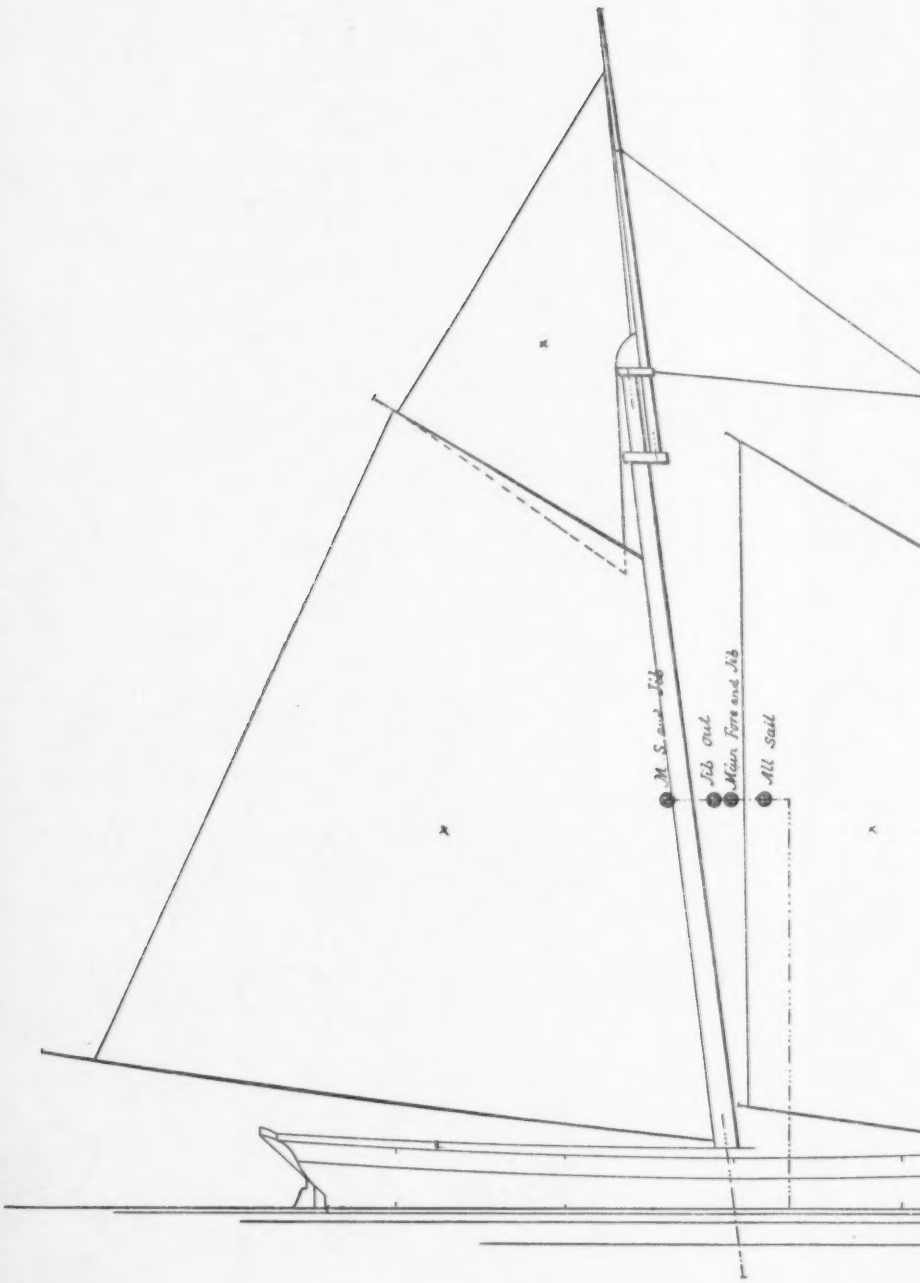





Calculation

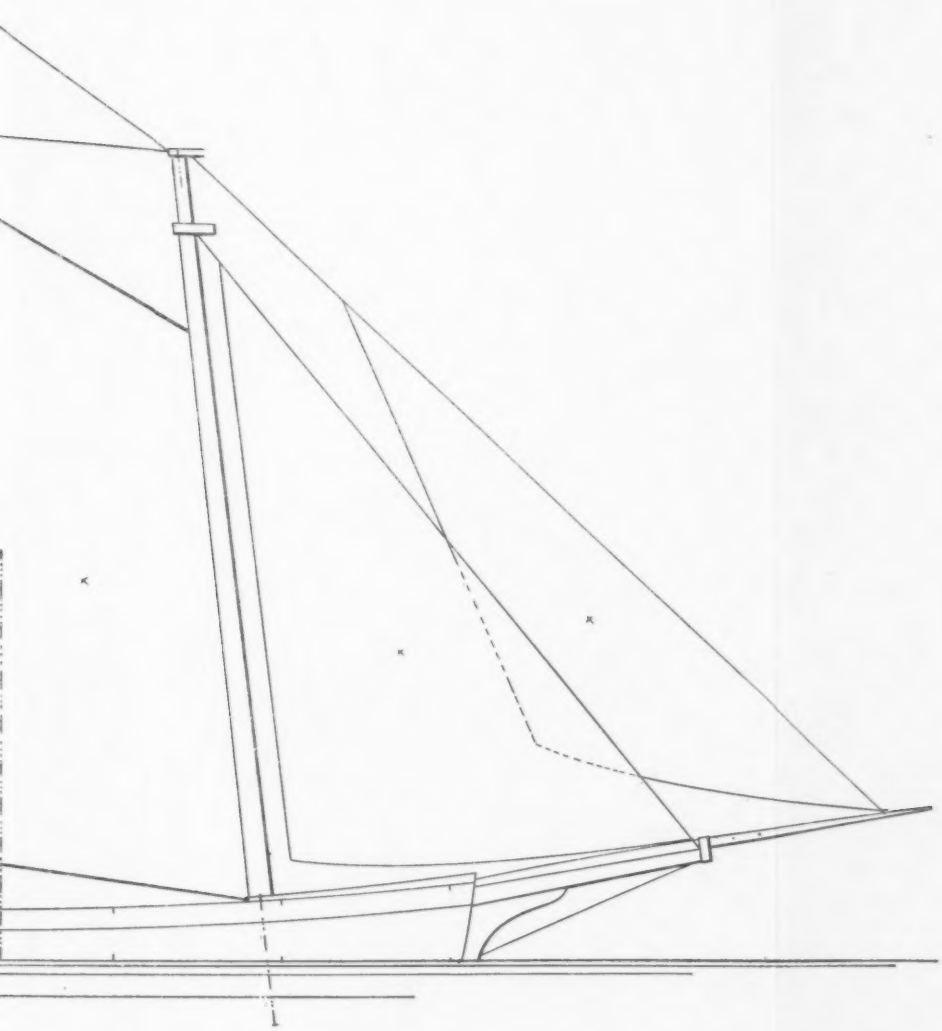
| | |
|---|---|
| ...rd aft of middle | ...00 |
| ...gitudinal Section aft of middle | 2.50 feet |
| ...cement | 0.564 |
| ...ine | 0.78 |
| ...n section | 0.926 |
| | 42664 |
| ...e above center of Displacement | 6.41 0 |
| ...middle | 2.06. |
| Load line | 33.30. |
| ...ssel | 145156.50. |
| | 4629 Sq Ft |

...ced from a contemporary tracing in the Peabody Museum of Salem.




Schooner *Richard R. Higgins* of Wellfleet, Massachusetts, built at East Boston, 1858.

Scale: $\frac{1}{16}$" =



ton, 1858. Reproduced from a contemporary tracing in the Peabody Museum of Salem.

Scale: $\frac{1}{16}'' = 1'$

# Queries

1. China Trade. Recently the advertisement quoted below came to my notice. It is to be found in the *Independent Chronicle* (Boston) issue of 31 December 1778. Can any reader supply further information about the vessel, her cargo, arrival, or her point of origin? It is possible that this is a direct entry from the Orient some years before any previously noted.

> 'Next THURSDAY, 8th Jan'y
> at ELEVEN o'Clock
> On New Long-Wharf (Salem)
> Will be sold
> By J. GRAFTON,
>
> The Snow EAST-INDIA PACKET, square stern, China built, different and much stronger constructions than vessels usually are, remarkably burthensome and esteemed as elaborate and as curious a piece of architecture as need be put together.'

D. E. BREWINGTON

2. Brady Photographs. While preparing a list of material of maritime significance in the Brady collection of Civil War negatives now in The National Archives, numerous puzzling questions have arisen. These might be listed as follows: On steamships, specifically river craft, was any considerable use made of figureheads or of full-size wood carvings analogous to them? A frequent ornament noted on vessels represented in the collection is an eagle with spread wings perched on a ball. These were frequently mounted on the pilot house, on the masthead, or elsewhere. The forward half of a side-wheel shoal draft river steamer appears in one of the negatives. On the top of the pilot house, which is called I believe the 'Texas,' there is what appears to be a full-size wooden figure with extended arms mounted on a block base. The figure in the photograph is quite small and measures slightly more than 1/4" and is not particularly clear. Was the use of figures of this type common practice on vessels of the middle nineteenth century? In the same photograph an eagle mounted on a ball appears on a stump foremast.

On some of the steam vessels an iron rod was mounted on the masthead similar to a 'dog vane.' In several instances, an ornamental animal figure appears on this vane. One in particular is in the shape of a leaping deer. What is the proper name for an appurtenance of this type? Is it a dog vane, or a type of weather-vane?

When were steam tug boats introduced in the United States as specialized vessel types? I am aware that many early steamers were used as tow boats, etc., but the river and harbor tug boat type seems to have appeared fairly early. Were tug boats and tow boats permitted in canals and what type of power was used to move these vessels in rivers, bays, and harbors? Was there any coastwise use of non-self-propelling scows, and canal boats at the time of the Civil War? It might be noted that numerous instances of canal boats in use in the James and Potomac Rivers are illustrated in this collection. It is possible to decipher the names and hailing ports of some of these vessels. Many seem to come from Philadelphia.

Is there any information readily available on the use of canal boats, scows, and in some cases converted river steamers as hospital boats? Several illustrations apparently showing craft of this type appear in the collection and the Sanitary Commission maintained at least one tug and probably several others.

VERNON D. TATE

3. W. Bygrave. Biographical information concerning W. Bygrave, who painted ship portraits at Messina about

the middle of the nineteenth century, and the record of any of his paintings would be greatly appreciated.

M. V. BREWINGTON

4. JOHN BRADFORD. I am looking for a brief printed biographical sketch of Captain John Bradford, Continental agent at Boston, 1776-1781. Can anyone help me out?

WILLIAM BELL CLARK

5. THE *Mary Celeste*. The *Maritime Register* (New York) of 6 November 1872 reported that the brigantine *Dei Gratia* was at 'Venango Yard.' This item was included in the list of vessels in port. I would like to ascertain the precise location of 'Venango Yard.'

Later in the same month Captain Morehouse, in command of the *Dei Gratia*, pursued a course well to the *north* of the Azores, whereas Captain Briggs, master of the *Mary Celeste*, pursued a course to the south of Corvo, Flores, Terceira and San Miguel, but instead of keeping to the *southward* of Santa Maria, the easternmost of the Azores, he apparently steered to the *northward*, as evidenced by the last entry on the log slate, 25 November at 8:00 A.M., indicating that the eastern extremity of the island 'bore 6 miles SSW.' Did Captain Briggs err in choosing this course at that season of the year, taking him, as it did, near Formigas Bank, about 20 miles to the northeast of Santa Maria? Of the two courses, was one less hazardous than the other?

CHARLES EDEY FAY

6. CAPTAIN E. S. BABBIDGE. Captain Eben S. Babbidge (1820-1870), who was master and part owner of the schooner *Brutus*, the brig *Open Sea* and the ship *Martha W. Babbidge* settled at Islesboro, Maine, after retiring from the sea. Can any reader furnish further information about his life, particularly the names of his parents, the place of his birth, and the names of any other vessels that he owned or commanded?

JOHN E. TYLER

7. HOUSE FLAGS. I am compiling a catalogue of the house flags of Maine shipowners, both of the square-rigged and schooner fleets. I am familiar with those of Clark and Sewall, A. Sewall and Co., Thom. Harward, Patten, Houghton, C. and W. D. Crooker, Flint and Co., Chapman and Flint, I. F. Chapman, Moses, Percy and Small, G. G. Deering, Adams and Hitchcock all of Bath and T. J. Southard of Richmond, Blanchard Brothers of Yarmouth, Skolfield Brothers of Brunswick, C. V. Minnot of Phippsburg, and J. H. Noyes of Castine. Can any reader supply me with information as to the colors of those of Nathaniel Lord Thompson of Kennebunk. Three versions of this flag are show in illustrations in Margaret J. Thompson, *Capt. Nathaniel Lord Thompson of Kennebunk, Maine and the Ships He Built*, 1811-1889 (Boston: Charles E. Lauriat, 1937). Or has any reader access to ship paintings of Maine-built ships who can furnish a description and colors of the house flags displayed, giving the name of the ship portrayed and, if known, the date of the painting and artist's name.

C. L. DOUGLAS

8. FIRST FOUR-MASTED SHIP. The *County of Peebles* of 1875 has been described as the first iron four-masted ship. However, Robert Ramsay, *Rough and Tumble on Old Clipper Ships* (New York: 1930), p. 238, gives an account of a four-masted iron ship *Romsdal*, built in 1873 for the Allan Line. Now the Allan Line certainly had a four-masted *Romsdal* built in 1877 and lost in 1891, but Ramsay makes such a good case for his date of 1873, associating it with the death of Horace Greeley (21 November 1872), that it seems likely that the Allan Line had a prior *Romsdal* built in 1873 and lost by 1877. Confirmation of the existence of a *Romsdal* in 1873 from *Lloyd's Register* or the shipping news of Eastern papers is therefore required. She is given as arriving at Montreal on her maiden voyage on 15 September 1873, and later traded to New York in the winter months.

J. LYMAN

# *Answers*

BARKENTINE *Leighton*, 1852. The only barkentine in the recently published second volume of New Bedford ship registerms, 1851-1865, is the *Matagorda* of 177 tons, built at Piermont, New York, in 1847, and registered at New Bedford in 1860. That her rig was original or nearly so is indicated by the fact that when she was ashore on the New Jersey coast in November, 1852, bound from Mobile to New York, the *Boston Daily Advertiser* (1 December 1852) referred to her as follows: 'The barque or three-mast schooner ashore on Egg Harbor Beach proves to be the *Matagorda* (which is sometimes called a barque).'

The *Matagorda* therefore would seem to antedate both the *Leighton* of 1852 and the *Carbon* of 1851 as the first barkentine on the Atlantic seaboard.

J. LYMAN

HAMPTON-HAMDEN BOAT. Since my spelling of this boat type's name is the cause of the original question, some comment from me on the information in the last NEPTUNE is in order.

I found a great variation in tradition as to the beginning of the type in question. For example, I find that some claim the type originated in Casco Bay, at Harpswell, others give a different place. So far as the Hampton Beach boat is concerned, I have made a study of this type; there was one still alive two years ago at Hampton Beach. This is called locally a 'Hampton Whaler.' It was better known as the 'New England Boat' further east. This general type was built all along the shore from Cape Ann to Portland and many were sold to the Maritime Provinces. There are a few examples in existence. In Casco Bay, the double-ender was not called a Hampton or Hampden Boat; it was known as a 'Crotch Island Pinky'! I have the lines of two; many were built by John Walker who had a shop near Yarmouth. No one seemed to call the Casco Bay double-ender a Hampden, or Hampton Boat. The model of the Crotch Island Pinky showed certain similarity to the square-sterned boats but there is practically no similarity to the Hampton Beach Whaler except both were lap-strake double-enders. If the square-sterned boats originated from the whaler why did not the sharp-sterned boats retain the type name? The traditional stories of the beginning of types are always confusing. To illustrate; the local yarn that the pinky type originated in an attic in Essex, Massachusetts, in the period just after the Revolution is open to reasonable doubt since there are newspaper references dated nearly ten years earlier. Practically the majority of the old builders, that I have talked to, claim the invention of some individual type for an ancestor or for themselves.

Thus having raised a dust to becloud the subject, I will proceed to become even more confusing. I talked and wrote to nearly all the older builders of the Hampton-Hampden Boats; some spelt the name one way, some the other. I found two half-models of what were claimed to be early Hampden or Hampton Boats; both square sterned and for both was claimed the title 'original.' They were somewhat similar to a ship's yawl boat.

Here is a description of the Hampden or Hampton Boat – carvel planked, square sterned, straight upright stem, raking heart-shaped transom, midsection has hollow floors and is well abaft the center of overall length; slight sheer; the deadwood aft is planked up like a large schooner's; strong drag to keel. 18-40 feet long.

Crotch Island Pinky – sharp sterned, with very raking post; stem upright and

slightly curved. Strong sheer with strong upsweep at stern, pinky fashion; midsection a good deal like the square-sterned boats but slightly less deadrise, strong drag to keel. 18-28 feet long. Clench planked (lap-strake).

Hampton Beach Boat — lapstrake double-ender; raking curved bow, raking post, round full midsection much like a whaleboat's, little drag to keel, moderate sheer. Type sometimes called 'Isle of Shoals Shay.' All rigged schooner, or half-ketch — half-schooner, without jib, as a rule. 18-26 feet long.

The Casco Bay Boats were always spritsail rigged as cat-ketches, with a light jib running on a temporary bowsprit for use in light weather. The Isle of Shoals and Hampton Beach Whaler were usually gaff rigged.

The New England Boat or 'Pinky-boat' was from 24 to 26 feet long, usually lap-strake, had a good deal of drag and were schooner or cat schooner rigged with either gaff or spritsails. I think they were the ancestors of the Tancook Whaler. Both had the same peculiar deck arrangement, in the larger half-decked size.

The No Man's Land Boats on the other side of Cape Cod were rather like the Hampton Beach Whaler in model and fitting. This was a lap-strake hull too, very moderate drag.

My conclusion is that the square-sterned boats were developed from the ordinary yawl boats; the Crotch Island Pinky was an outgrowth of the New England Boat; modified by the inclusion of a midsection of the square-sterned boats and the sheer of the true Pinky.

The spelling of the name is still an open question; perhaps either spelling must be accepted for the present.

Perhaps a rigged model of each of the types mentioned in this note will be possible eventually. It would be interesting to compare models of the Block Island Boat, No Man's Land Boat, Isle of Shoals Shay, Hampton Beach Whaler, Crotch Island Pinky, Peapod and Carry-away Boat with the old New England Boat. If enough information could be assembled to build such a series accurately we might be able to base a conclusion on something firmer than tradition or speculation.

HOWARD I. CHAPELLE

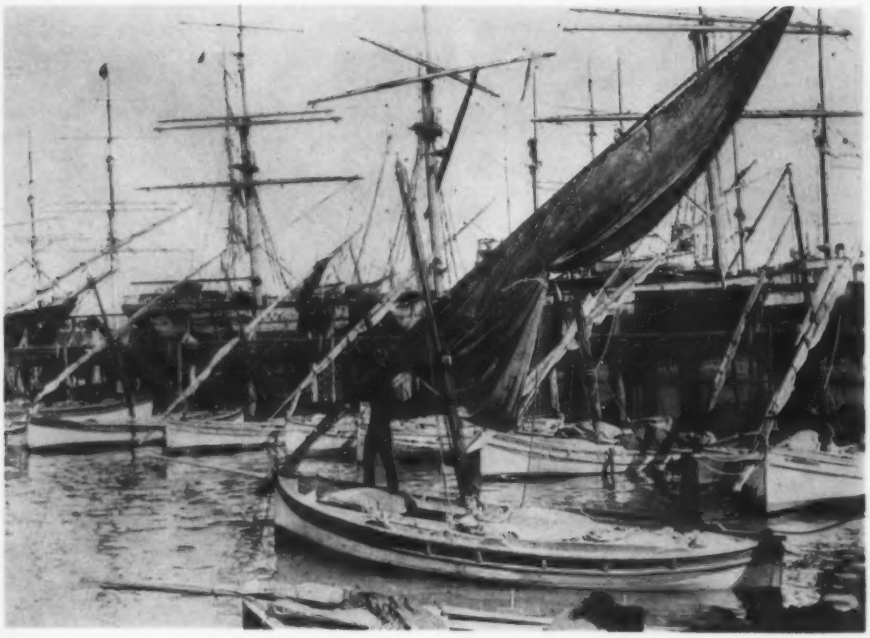
SEA CHESTS. I have scanned more than one thousand log-books and the only reference to a sea chest noted is in the log of the schooner *Emily* owned by Captain William Henry (Bully) Hays. The entry, made by the mate, John N. Powless, is as follows: 'Schr *Emily*, E. A. Pitman, Master, lying in the Lagoon at Milley, Marshall Group. Friday, July 5th 1872, P.M. Light breeze from NE and very sultry weather. On yesterday evening when we came on board Capt Pitman on going to his chest, *which was always left unlocked*, missed an American half dollar, the only one he had of that coin in the chest. He had received one that day from a native for trade. On questioning the native in the evening after our return to shore, the native confessed after some prevarication that he had it from Our Cook (Peter of Guam) in return for some favors bestowed by the native's wife on Peter of Guam. Peter of course stoutly maintained his innocence, but the proofs were positive, and the Capt. fined Peter the sum of $50.00 to be deducted from his wages.'

L. W. JENKINS

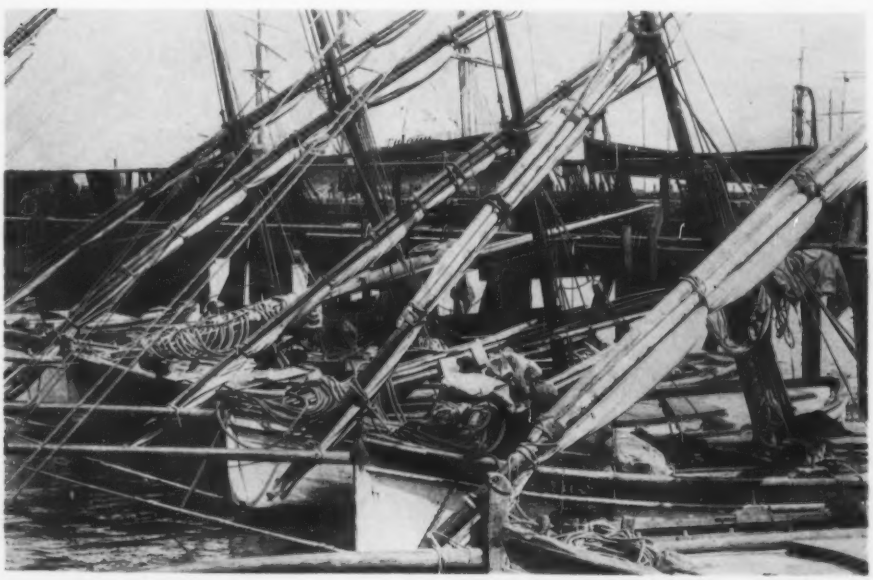
SEA CHESTS. It was a distinct breach of etiquette to lock a sea chest. The writer was warned against it in 1910 by another more experienced sailor who told him that as a result the lid would be most thoroughly nailed down.

PEHR SPARRE

THREE-MASTED SCHOONERS. Mr. Roland M. Howard of Blue Hill, Maine, calls attention to an anonymous article 'The First Three Master' in *The Blue Hill Times*, 28 February 1889, which states in part: 'The first three masted schooner built in the State of Maine and the



San Francisco Bay lateen-rigged fishing boats tied up at 'Fisherman's Wharf'



San Francisco Bay lateen-rigged fishing boats tied up at 'Fisherman's Wharf'

*Reproduced from photographs owned by Edward Strong Clark*

**San Francisco Bay lateen-rigged fishing boat under sail in the Bay**
***Reproduced from a photograph owned by Edward Strong Clark***

United States was the *Magnolia*, built in Bluehill, by George Stevens, Esq., and Jere Faulkner for Capt. Daniel Clough, who was her first master. The *Ellsworth American* claims that the first true [*sic*] master built in 1831 by Col. Daniel Black called *Aurora*, but did not name her rig which I am told by parties now living, was a topsail schooner; that is, she had yards and carried square sails alofts and the same was true of the *Fame*, built in 1833, the same year in which the *Magnolia* was built by Stevens & Faulkner.'

Mr. George A. Nelson, Deputy Collector of Customs at Portsmouth, New Hampshire, calls attention to the register issued at Portsmouth, 17 August 1824, to the schooner *Pan Matanzas*, 152 53/95 tons, 78.9 x 20.9 x 10.45, built at Dover, New Hampshire in 1824 by Reuben Currier, which is described as having three masts. The *Pan Matanzas* was sold to Boston owners in 1824, and was registered at Boston 15 December 1824, 20 November 1826 and 1 December 1826. However, R. B. Forbes in *Notes on Ships of the Past* (Boston, 1888), p. 148, states that the *Pan Matanzas* 'carried square sails on the two forward masts; there were no courses, as in barks, and her lower topsails hoisted on the heel of the topmasts below the caps, and the other square sails, known as the upper topsails, as well as the topgallant-sails, set as usual above the caps, and furled to the yards to which their heads were bent.'

# News

### The Century Association

*New York City.* An exhibition of portraits of American Sailing Vessels, arranged by Walter Muir Whitehill, Assistant Director of the Peabody Museum of Salem, was held in the club's picture gallery from 3 April to 27 April 1941. Thirty-six paintings, lent by the Peabody Museum, the Massachusetts Historical Society, the Historical Society of Pennsylvania, the New York State Historical Association, India House, the Boston Museum of Fine Arts, and various private collectors were shown. A limited number of catalogues of the exhibition may be had upon application to the Peabody Museum. The paintings ranged in date from the ship *Bethel* of Boston of 1748 (the earliest known portrait of an American colonial ship) to the schooner *Rinnie J. Carlton*, built at Essex, Massachusetts, in 1874.

### The Mariners' Museum

*Newport News, Virginia.* The new north wing of The Mariners' Museum was formally opened to the public on 29 May 1941. It is intended that this wing be used for rotating exhibitions, and accordingly there was displayed for the first time as a unit the collection of paintings and marine memorabilia bequeathed to the Museum by the late Robert Lyons Hague (1880-1939), heretofore kept in storage. The collection includes seventy-one oil paintings mostly by contemporary marine artists, including Montague Dawson, Frank Vining Smith and Charles Rosner; thirty water colors, mostly by Hunter Wood and Charles Rosner; fifty prints; two hundred framed photographs of sailing vessels and seaports; forty models; eighty-five whale's teeth; the log of the Revolutionary sloop-of-war *Ranger* (26 August 1778 through 10 May 1780); the log of C. S. S. *Florida* (9 January through 13 August 1864); autograph letters of Lord Nelson and Admiral Farragut, and the bell of S. S. *Leviathan*.

### Metropolitan Museum of Art

*New York City.* The exhibition of the China Trade and its Western Influence, which opened on 22 April, will remain through the summer and close on 21 September 1941. An illustrated catalogue of the exhibition is reviewed on page 324 of this issue.

### New York Historical Society

*New York City.* In 1939 when The New York Historical Society, 170 Central Park West reopened its remodeled building with the addition of two new wings, a new hall was created called the Port of New York Gallery fashioned in the style of a ship with stern cabin. It has become one of the most popular galleries in the museum and has drawn many visitors interested in maritime history. The gallery too, is constantly used by the schools of the city in instructing children in the history of shipping and the story of the greatest port of the world. From the cabin windows one may view the port of New York as it appeared during five important periods of the history of New York. From authentic paintings and prints in the Society's possession the views were re-created by a modern artist for the dates of 1626, 1740, 1793, 1825 and 1939. In the gallery proper, fitted in nautical fashion are shown views of the harbor and pictures of the ships that entered and left the Port of New York from the earliest period to the present. The types of ships include ocean-going clippers, steamboats, as well as a large section of the well-known Hudson River Excursion boats.

Items of particular interest are the model of John Fitch's first steamboat of 1785 which preceded Robert Fulton's; the model of Bartholdi's Statue of Liberty done in 1875 and numerous models of ships, including the *Mayflower, Half-Moon, Rose of Boston* and others. Nautical equipment consisting of a binnacle *c.* 1870, sextants, octants, hour glasses, life preservers are among the interesting relics displayed in this gallery.

### Peabody Museum

*Salem, Massachusetts.* Mrs. Edward Law of Haverford, Pennsylvania, has given the Museum fourteen paintings and eighty-four prints of sailing vessels, steamships and yachts, collected by her father, George Saltonstall Silsbee of Beverly, Massachusetts. Among the paintings are watercolors of the Salem ships *Belisarius* and *Fame* and the brig *Diomede* (owned by the Crowninshields in the early years of the nineteenth century). The prints include the rare aquatint of the engagement between the Salem privateer brig *Grand Turk* and the British mail packet *Hinchinbroke* on 1 May 1814, and numerous lithographs by N. Currier and T. G. Dutton.

Mrs. William Norton Bullard of Lenox, Massachusetts, has given a miniature of Rajender Dutt, merchant of Calcutta, which had been given by Rajender Dutt to her father-in-law, William Story Bullard, of the Boston shipping firm of Bullard and Lee, in the second quarter of the last century.

The Museum has purchased the business papers of the Boston shipping firm of Bates and Company, covering the thirty years before the Civil War, and the papers of the Portsmouth shipyard of Fernald and Pettigrew, which contain documents relating to the building of a number of clipper ships.

The trustees have decided to discontinue the use of their lecture hall, and to remodel it to provide five small exhibition rooms and additional space for the storage of books and paintings.

### Peabody Museum Marine Associates

*Salem, Massachusetts.* At the meeting on 24 March 1941 United States Navy sound moving pictures were shown through kindness of Lieutenant Commander J. A. Chambers, a member of the Associates. Commander Chambers spoke briefly before the showing of the pictures.

The regular April meeting was omitted, and in its place a dinner was held on Saturday, 3 May, at the Hotel Hawthorne, Salem, to celebrate the publication of The American Neptune. The Associates assembled before dinner in the Cabin of the Salem Marine Society on the roof of the Hotel Hawthorne. After dinner Samuel Eliot Morison, President of The American Neptune, Incorporated, and Lincoln Colcord (who had first suggested the idea of publishing The American Neptune at the October 1939 meeting of the Associates) spoke. Stephen W. Phillips was toastmaster. A rum punch, made by Augustus Peabody Loring, Jr., from a recipe obtained in the West Indies 150 years ago by his ancestor Joseph Peabody (1757-1844), was served.

On 26 May 1941 A. Alfred Mattson gave personal reminiscences of fur seal hunting in the South Atlantic in 1904-1905.

### San Francisco Museum of Science and Industry

*San Francisco, California.* During the 1940 Exposition on Treasure Island a group of San Franciscans sponsored an exhibit of ship models, photographs and old shipping documents, assembled from private collections and from firms engaged in various maritime activities. At the close of the Exposition the exhibit was moved to the ground floor of the Merchants' Exchange Building in the financial center of San Francisco. Such enthusiastic interest was aroused that it was determined to expand the exhibit and make it permanent. In October 1940 the San Francisco Museum of Science and Industry was incorporated as a non-

profit corporation, and the Mayor and Board of Park Commissioners of the City and County of San Francisco provided a suitable building at Aquatic Park Center in May 1941. The marine exhibit is now installed there and is open to the public without charge. In addition to sea transportation, the trustees hope eventually to include exhibits of land and air transportation, mining and agriculture. The Director of the Museum is Edward Strong Clark.

The Museum will now gratefully accept loans or gifts of suitable marine objects from private collectors or business firms, and would welcome catalogues and publications of other marine institutions for its library. Although the building is provided by the city of San Francisco, all other necessary expenses are covered by voluntary contributions, and consequently the Museum cordially invites interested individuals and organizations to become members. Life membership is fixed at $250.00, and there are three classes of annual membership: corporate or company membership at $25.00, contributing membership at $10.00, and non-voting membership at $5.00 per year. Applications for membership should be sent to San Francisco Museum of Science and Industry, Aquatic Park, San Francisco.

### Steamship Historical Society of America

*Salem, Massachusetts.* The spring meeting of the Society was held at the Marine Historical Association, Mystic, Connecticut, on 19-20 April 1941. The summer meeting will be held at the Peabody Museum of Salem on Saturday and Sunday, 23-24 August. Readers interested in attending the meeting or joining the Society are invited to communicate with Robert McRoberts, Executive Secretary, 116 Farragut Road, North Plainfield, New Jersey.

### Biblioteca Maritima Magallanes-Elcano

*Havana, Cuba.* The Asociación Bibliográfica Cultural de Cuba announces the proposed establishment of a maritime library, named in honor of Magellan and Elcano, in Havana. The plan calls also for a collection of ship models. The undertaking is in charge of Dr. Julio Villoldo and Dr. Juan Manuel Planas, and is receiving the support of various Cuban and Spanish naval officials. Further details may be had from the Asociación, whose address is Carlos III no. 614, Depto. 301, Havana.

### Notes on Contributors to The American Neptune

Louis H. Bolander is Assistant Librarian of the United States Naval Academy, Annapolis.

Charles Knowles Bolton is Librarian emeritus of the Boston Athenaeum.

M. V. Brewington, one of the Editors of The American Neptune, is particularly concerned with the history of American shipbuilding.

Lincoln Colcord is Secretary of the Penobscot Marine Museum, Searsport, Maine.

Carl C. Cutler is Secretary of the Marine Historical Association, Inc., Mystic, Connecticut.

Forrest R. Holdcamper is a member of the staff of The National Archives, Washington, D. C.

William D. Hoyt, Jr., is a member of the staff of the Alderman Library, University of Virginia, Charlottesville.

John Lyman, of the Scripps Institution of Oceanography, is now on active duty in the United States Navy.

John W. McElroy, who was Chief Navigating Officer of the Harvard Columbus Expedition, is now on active duty in the United States Navy.

Hazel Emery Mills (Mrs. Randall V. Mills), a graduate of the University of California, is particularly interested in the literature and history of the American frontier.

Arthur C. Wardle is Secretary of the Liverpool Nautical Research Society.

# *Book Reviews*

HULBERT FOOTNER, *Sailor of Fortune, The Life and Adventures of Joshua Barney* (New York: Harper & Brothers, 1940), 5½" x 8½", cloth. 323 pages, illustrations.

To be a part of American naval tradition is no small honor, but to be one of the founders of that tradition is more than an honor; it is a place in history. Joshua Barney has such a place, and Mr. Footner's book is an able and entrancing account of how it was achieved. From the time he was fifteen, when he commanded — through the death of the captain — a vessel on a voyage from Baltimore to Nice and return, almost until his death he was engaged in one kind of conflict or other. Most of his battles were fought at sea, for he took part in more than two dozen naval engagements, but some were fought on the dueling ground and others on paper. These last were as bitter as the ones in which blood was spilled, and Barney thereby made many enemies at home. It is the usual penalty of having a decided character, pride, and a due appreciation of one's own ability.

Briefly his career included naval service in the Revolution as a United States naval officer, a commander of State vessels, and privateers; a tour of duty in the French Navy where he gained the rank of Commodore; and service as a privateersman in the War of 1812 and later as a United States naval officer in the same struggle. In the latter capacity he was charged with halting the depredations of marauding British small craft in the Chesapeake Bay. It was Barney who commanded the seamen at the Battle of Bladensburg, and the seamen were the only American forces really on the field that day. Barney was wounded and captured; he had been wounded before and he had been captured before, and once escaped twice from the same captivity. He was a friend of Washington, Franklin and Paul Jones, of Toussaint L'Ouverture and Christophe. His life furnishes material for half a dozen novels and one fine biography, and it is a fine biography that Mr. Footner has written.

The temptation is strong, when writing about such a man, to forget or gloss over his short-comings and to stress his virtues. Mr. Footner has avoided that danger and has succeeded admirably in making his hero seem as real as Barney must have seemed to his seamen, to his friends and to his foes. The book presents an excellent picture of the period and the people, and must be classified as history as well as biography. What has already been said will be enough to inform other historians and biographers of the amount of research work which went into its production. It is a highly competent piece of work and it is eminently readable. The two are not always found together.

JOHN PHILIPS CRANWELL

*Washington, D. C.*

E. LeRoy Pond, *Junius Smith, pioneer promoter of transatlantic steam navigation* (Mystic, Connecticut: The Marine Historical Association, Inc., 1941). 7" x 10", paper. 40 pages, numbered 87-121), 5 plates. Vol. II, no. 2. of *Publications of The Marine Historical Association, Inc.*, printed for distribution to members of the Association.

Junius Smith (1780-1853) was a Connecticut Yankee, although resident in Britain as a merchant during the most active years of his life. His enthusiasm for the organization of a regular transatlantic steamship service dated from 1832, and culminated in the founding of the British and American Steam Navigation Co. in 1835. Sailings were inaugurated by the *Sirius* in 1838, and continued until 1841 when the company failed. Although Smith's plans thus ended in disaster, the service which he opened was carried on by others, some of whom gained greater fame as well as richer financial rewards. Pond makes very clear Junius Smith's great significance in the generation of enthusiasm and the arrangement of financial backing for the first regular transatlantic steamship line.

This pamphlet is based on the same author's book, *Junius Smith, a biography of the father of the Atlantic liner* (New York: Frederick H. Hitchcock, The Grafton Press, 1927), a volume of 292 pages. There is no evidence that new materials have been used, for though David Budlong Tyler's *Steam conquers the Atlantic* is mentioned in the appendix, there are no references to it in the text or footnotes. Also, although there is some consideration of sailing packet services, the work of Robert Greenhalgh Albion is not mentioned. The pamphlet, like its larger predecessor, is based principally on the letters of Smith, with reference to contemporary newspapers and to some secondary works. There are extensive quotations from the letters in the text, and the appendices contain Smith's first prospectus of 1835, as well as newspaper comments of the day. There is no bibliography. The pamphlet is well printed and contains reproductions of a painting of Smith and prints of pioneer transatlantic steamers.

John Haskell Kemble

*Pomona College*

*History of Union Steam Ship Company of New Zealand, Limited 1875-1940.* (Wellington, N. Z.: issued by the Company in Commemoration of the Centenary of British Settlement in New Zealand, 1940). 7⅜" x 9⅝", paper boards. 55 pages, 72 illustrations.

The text proper of this brochure runs to no more than twenty-five pages, but the amount of information it contains is amazing. It consists, first, of an outline of the history of the numerous services now maintained by the Company and its subidiaries, in the course of which many of the notable units of the fleet, past and present, are noticed briefly. The Union Steam Ship Company has always been progressive in outlook and spirit, and the 'firsts' to its credit include the building of the first merchant vessel constructed of mild steel, the first merchant vessel lighted throughout with electricity, the first turbine liner in the Pacific, and the first large passenger motorship. It is interesting to note that as long ago as 1913, when the Company was reorganized, its far-sighted directors took powers in the new Articles of Association to engage in aviation, and those powers have been exercised in recent years.

The history of services and ships concludes with a note on the present scope of the line, which in a normal year now carries about 2,500,000 tons of cargo and as many as 350,000 passengers. It is followed by an outline of the financial and corporate history of the Company, with notes on Sir James Mills, founder and managing director for almost forty years, and other personalities prominent in its story.

The text is supplemented by a complete list of the 213 vessels which at one time or another have been owned by the Company. Twenty-six of the illustrations are photographs of steamers, ranging from units of the original fleet of 1875 to the *Awatea* of 1936. Most of the rest are pictures of officials, and it is pleasant to find that captains and chief engineers are permitted to share the limelight with directors and branch managers.

W. KAYE LAMB

*University of British Columbia*

SHUNZO SAKAMAKI, *Japan and the United States, 1790-1853: A Study of Japanese Contacts with and Conceptions of the United States and its People Prior to the American Expedition of 1853-4.* [The Transactions of the Asiatic Society of Japan, Second Series, Volume XVIII, 1939.] (Tokyo: the Society, 1939). 6" x 8½", boards. xi + 204 pages, 6 plates and 1 sketch map. 5 *yen.*

Amy Lowell once published a poem on Commodore M. C. Perry entitled 'Guns as Keys; and the Great Gate Swings'; the superior dissertation under review might be called 'Ships as Keys.' Whalers, fishing junks, and merchantmen and their crews, often in distress, began the opening of cultural gates which has enabled Japanese and Americans slowly to learn more of each other, whether in coöperation or in conflict. Neptune's informal ambassadors supply the chief theme of the book.

Published in the distinguished T.A.S.J. series, with aid from the American Council of Learned Societies, the research greatly expands previous scattering knowledge of Japanese-Amerian contacts before Perry. It draws on an impressive amount of source material and published research in Japan. Its use of considerable detail is satisfying and discriminating. Some of the material is relevant to topics of present-day interest, *e.g.*, North Pacific fisheries.

Among the intriguing illustrations are reproductions of curious early Japanese maps of the outside world; a picture of Americus Vespucius (whose name the Japanese source drawn on translated into Japanese as 'Mr. New World,' since ' "America is said to mean New World in an European tongue" '); and another picture, from a Japanese work (1853) on America, which fully lives up to the legend: 'In the icy waters of America Westerners catch whales, sea horses. . . , or sea dogs. . . .' On page 143 there is an interesting reference to a Japanese sketch which 'portrays the departure of Columbus' ship from Spain' and to another picture which 'tells the story of the sighting of land from the ship's masts.'

Nine chapters deal chiefly with castaways from different American vessels in Japanese waters and with American efforts to initiate trade; the influence of a few courteous individuals of both races and the crudeness of several Americans are evident. One chapter presents important facts concerning American contacts with shipwrecked Japanese seamen. Four others discuss English studies in Japan, 1760-1853; early maps and knowledge of America; American notices in reports of the privileged

Dutch traders at Nagasaki; and Japanese accounts of the United States and its history, which constitute interesting mirrors. Available knowledge of corresponding American conceptions of Japan is not given much attention. An appendix affords a chronological view of Western ships in Japanese waters during the period. A glossary permits convenient retention of special Japanese terms in the text, and the extensive bibliography of sources in various languages adds information and ideas essential to students of American history and international relations. The index (of proper names) would have greater reference value to busy specialists in several social and linguistic subjects if it also contained analytical entries under current categories; the workmanlike Conclusion must serve as a partial substitute, though it omits treatment of several interpretative reflections and queries to which the stimulating subject-matter leads.

Professor Sakamaki's mature addition to scholarly knowledge will generate new researches, including greater study of American log books and consular manuscripts. His situation at the University of Hawaii, East-West portal in mid-Pacific, is favorable to such work, especially by scholars of Asiatic-American background. Dr. Sakamaki has set a high standard of precise, idiomatic, and at times distinguished English style. His book merits wide use among scholars and the general reading public (see, for example, engaging material on page 149).

ELDON GRIFFIN

*Seattle, Washington.*

SAMUEL CHAMBERLAIN, *Old Marblehead: A Camera Impression* (New York: Hastings House, 1940). 6" x 7¼", boards. 76 pages, illustrated end-papers, 108 photographs. $1.25.

In 108 photographs, Samuel Chamberlain gives a picture of Marblehead, Massachusetts, which is bound to fill with nostalgia all those who have lived in that town or who have anchored in its pleasant harbor. It is purposely a romantic picture: 'By dodging automobiles and the most ugly and arrogant of telephones poles,' we read in the foreword, 'this impressionable lens tries to catch the Marblehead which delights the artists and the visitor alike.' About half the plates are of eighteenth- and nineteenth-century architecture and every effort has been made — by careful choice of viewpoint and time of day—to eliminate the obtrusion of the modern world. The very care with which this plan has been carried out seems to us to weaken the value of the composite portrait. We have lived in Marblehead; in our younger days we developed our marine interests while pestering the good-natured shipbuilders. To us, Marblehead is a living community, not a collection of historical monuments, not a quaint place at all. We feel that the very telephone poles which Mr. Chamberlain avoided are a part of the town, and as such should be recorded.

The last part of the book is of general maritime interest. Marbleheaders still make a living from the sea. Some of the spiritual, if not indeed the lineal, descendants of those who built the pictured houses still fish for lobster and cod, working from unlovely power boats instead of the more picturesque Friendships. They build lobster traps as their fathers and grandfathers did, and still dry their nets on great revolving racks. We should have liked to see more detailed pictures of this dying industry. Some day the power boats with their canvas hoods, their steering-wheels fastened

within the gunwales amidships, and the single davit for hoisting lobster pots aboard, will have disappeared as completely as the local sailing craft which we now so zealously try to recreate. Two or three miles down the coast at Swampscott, the fishermen still row ashore in dories, and roll them up the smooth and sandy beach on rollers carried in the boat. The town fathers have made them give up the practice of gutting and cleaning their fish then and there at the water's edge, for 'Summer people' dislike – and one cannot blame them – swimming among fish heads and gurry. In Marblehead they row ashore in home-made punts – ridiculous square or triangular boxes not more than six or seven feet overall. A few fathoms off the rocky shore are anchored buoys, and from each an endless rope runs up to a pin on the rocks. They land among the rocks, fasten the painter to the rope, and pull the empty boat out to the buoy. These are all details, insignificent, it is true, but part of the manners and customs which give a locality its peculiar character and atmosphere. We think they should be recorded.

Yachting, too, deserves more careful documentation. It is not enough to photograph yachts standing on their cradles in Graves' yard, framed by the silhouette of the boat shed. We would like to go inside, and see the Yankee tradition of craftsmanship in action. Nor can long shots of races be considered ample. We should like to see closeups of skipper and crew under the tension of jockeying for the start; millionaries in their luxurious craft; the crews of the lovely schooner yachts swabbing down decks in the early morning sun. And we should like to see, too, how yachting dominates the town, from the houses on Front Street dwarfed by great passing sails, to the streets crowded with Corinthian sailors loaded down with duffle bags and oars, and the ship chandler's shop with handmade mops decorating the windows.

Perhaps we demand too much. *Old Marblehead* is but one of a series of architectural picture books which Mr. Chamberlain, forsaking his etching needle, has produced during the past year. Himself a resident of Marblehead, he has ably demonstrated the appeal of the town, and why more and more 'outsiders' are coming there to live.

BEAUMONT NEWHALL

*Museum of Modern Art*

ROBERT RALSTON CAWLEY, *Unpathed Waters: Studies in the Influence of the Voyagers on Elizabethan Literature.* (Princeton: Princeton University Press, 1940.) 5½" x 8½", cloth. x + 285 pages. $3.75.

When Professor Cawley's *The Voyagers and Elizabethan Drama* appeared in 1938, he promised a sequent volume which should concern itself with 'what the Ancient World and Middle Ages bequeathed to the Renaissance, . . . the peculiar uses made of the voyagers by individual dramatists, . . . the appearance in literature of outstanding travelers,' and the other manifestations of interest in regions strange and remote and in their flora and fauna. *Unpathed Waters* is the fulfillment of that promise.

The renaissance memory thronged with stories of the Fortunate Islands, the Floating Islands, the Terrestrial Paradise, Ophir, Ultima Thule, and the Lost Atlantis, so that voyagers and poets alike tended to interpret and classify the facts and

legends about America, Terra Australis, Muscovy and Cathay in familiar categories. For example, Bacon's New Atlantis, whose very name is burdened with classic and medieval lore, is located off the west coast of South America in a spot roughly antipodal to the Old Jerusalem and is blessed with many features generally attributed to the Earthly Paradise. One service rendered by Professor Cawley's book is to record with enthusiasm the vigorous reactions of the Elizabethan poetic mind to the new phenomena and to remind modern readers that Shakespeare and his contemporaries were not systematic in their thinking. No Elizabethan writer was consistent in his attitudes towards the voyages. Cowley, writing of the Red Sea, may represent one extreme: 'Because that opinion of the Redness of the shore in some places, has been most received, and is confirmed even to this day by some Travellers, and sounds most poetically, I allude to it here, whether it be true or not.' Sir Thomas Browne's expressions of skepticism in *Pseudodoxia Epidemica* are at another extreme. But in general whatever stimulated the imagination was put to immediate poetic use, regardless of source and of philosophic consistency.

The first four sections of *Unpathed Waters,* though dealing with refractory materials, are a mine of information which students of Elizabethan literature will quarry and plunder. They remind us, for instance, that Elizabethans made practical use of the therapeutic powers of music. John Davis took four musicians on a northwestern voyage in 1585 to mollify the Eskimos, and Frobisher 'was similarly provided on his second voyage, well aware that "music purges melancholy, out of which comes quarrels, mutinies, and seditions." ' And it is inspiriting to read of the audacity and hardihood of our ancestors, the early English colonists in America: 'Whether their end was gain or game, whether they went to convert the heathen or improve their minds, for country's honor or out of sheer curiosity to see what these strange new regions and peoples looked like, they went with an enthusiasm which swept the country. All corners of the world knew them, knew their adventurous spirits and the magnificent courage which carried them to their objective undaunted.' The last section, dealing with seven major Elizabethan writers, including Shakespeare and Bacon, provides Mr. Cawley with his best opportunity to interpret a fascinating chapter of the History of Ideas, and he makes the most of it. In conclusion, I note one mis-spelled word (page 228, 'seered' for *seared*), one misinterpretation (page 208, where the two lines quoted from Massinger have exclusively sexual significance), and one possible oversight: the strong probability that Shakespeare was familiar with and influenced by the illustrations as well as the text of the accounts of Barents' voyages to Nova Zembla.

JAMES G. MCMANAWAY

*The Folger Shakespeare Library*

VILHJALMUR STEFANSSON, *Ultima Thule: Further Mysteries of the Arctic* (New York: The Macmillan Company, 1940). 5½" x 8½", cloth. viii + 383 pages, 17 illustrations (principally maps) by Alexander Popini, bibliography, index. $3.50.

Students of marine research, historians and geographers particularly, will welcome this recent work. Vilhjalmur Stefansson in his engaging style presents a thesis begotten of antiquity, nursed through centuries of unqualified acceptance of 'geo-

graphic truths' evolved from the supposedly infallible Greek classics, and only recently matured through the more widespread penetration and consequently more accurate description of the Arctic by man. The thesis is developed around the ever-interesting, certainly significant, controversy concerning the definition of the Arctic and its physical and human characteristics. It is a presentation of what the theoretician or arm-chair philosopher concludes is (or is not) the Arctic region, versus the statements of the man, the scientist, who has been there and experienced the full impact of its environment.

*Ultima Thule* consists of three lengthy chapters: 1, 'Pytheas and Ultima Thule' (pp. 1 through 107); 2, 'Did Columbus Visit Thule?' (pp. 109 through 222); and 3, 'Were Pytheas and Columbus Right about Arctic Climate?' (pp. 225, not 255 as noted in the Table of Contents, through 361).

In the first chapter Stefansson presents the case of 'Pytheas and Ultima Thule' in the light of numerous conceptions and misconceptions as to what Ultima Thule was and is supposed to be, and of Pytheas, the man, the scientist and, most important of all, the honest recorder of facts seen or heard on good authority. In this chapter the reader is immediately confronted by the ever-recurring theme of the book, the veracity of the explorer, the recorder of landscapes seen, versus the theoretician who seeks to explain Arctic phenomena in terms of certain physical laws, many of which stem from the preconceived notions of the Greek scholars. So, Strabo, branding Pytheas's favorable description of Ultima Thule as impossible because it did not agree with what Greek learning defined it to be, fathered a controversy and defended a school of thought which even today finds agreeable acceptance among the learned.

The second chapter engages the reader's interest from the start with the query 'Did Columbus Visit Iceland? . . . Who cares. Perhaps we had better clean that up first' (p. 109). Into this chapter is woven much fabric of fact and not a little of fiction about Columbus and his voyage to Iceland – 'Thule.' The pros and cons of this voyage having been made, are well ventilated through the testimony of the many adherents to each side; yet the reader completes the chapter having found no answer to the question raised in the introduction. Perhaps this is as it ought to be. Indeed, it is stimulating.

The third chapter presents the case of the moderns – the navigator, geographer, historian, explorer and meteorologist. With all the frankness and the crisp style of which Stefansson is a past master the reader is presented with a mass of conflicting, contradicting and certainly opposing descriptive definitions, the evidence of what the Arctic is, particularly its summer climate. Stefansson skillfully explores the many recent sources of information on Arctic weather and permits the reader to see the all-too-numerous inconsistencies in the writings of generally accepted authorities on polar climates. The verdict, however, is left to the reader.

The reviewer is surprised to find no mention of two fundamental works on the Arctic: *The Geography of the Polar Regions, Consisting of a General Characterization of Polar Nature* by Otto Nordenskjöld and *A Regional Geography of the Arctic and the Antarctic* by Ludwig Mecking, Special Publication No. 8, American Geographical Society, New York, 1928, 359 pp. and *Meddelelser om Gronland*, vols. 1 through 105+, Copenhagen 1879 to 1940. Nor is this reviewer convinced that Stefansson has not become a special pleader.

The serious reader, the scholar, is at once perplexed by the introductory statement to the by no means adequate bibliography, that 'The Pytheas chapter, . . . frequently refers to authorities without giving bibliographical information. Accordingly, we have made up a list of the chief works there consulted' (p. 363). Referring back to this chapter the reader discovers not only that some of these works are listed, but that they appear to be more completely described there than they are in the bibliography. For example, in the bibliography (p. 364) Dicuil is given as the author of *Liber de Mensura Orbis Terrae* (Parthey edition, Berlin, 1870), yet on pages 58-60 is a fund of information about this and other editions and related manuscripts, as well as a brief statement about the author. Each of the chapters is a mine of information not only pertinent to the subject but as well of a bibliographic nature, which, with the necessary, and often only a few additional descriptive words, would be complete bibliographic entries in themselves.

The book is stimulating reading and should be a valuable addition to any collection of works on maritime, historical and controversial subjects.

HERMAN R. FRIIS

*The National Archives*

*The China Trade and Its Influences* (New York: Metropolitan Museum of Art, 1941). 6″ x 9¼″, paper. xi + 21 pages, 101 illustrations. 50¢.

The Metropolitan Museum's gay and exuberant exhibition of the China trade is well represented in this book, which is not the typical exhibition catalogue. It is rather a picture book of permanent value with introductory essays by members of the Museum staff on 'The Sea-Borne Trade with the Far East,' 'The Chinese Style in Europe' and 'The American Trade with the Far East.' The plates include not only the portraits of ships, Chinese merchants, port views, export porcelains, fans, carved teak and lacquer furniture, which, to the nineteenth-century American, meant China, but eighteenth-century English and French chinoiseries, ranging from ormolu clocks to Beauvais tapestries, from Meissen and Staffordshire figures to needlepoint panels.

THEODORE C. BLEGEN, *John Quincy Adams and the Sloop 'Restoration'* (Northfield, Minnesota: Norwegian-American Historical Association, 1940). Octavo, paper cover. 29 pages.

Issued as a reprint of an appendix to Dr. Blegen's *Norwegian Migration to America: The American Transition*, this study documents the story of the arrival of the first shipload of modern Norwegian immigrants at New York on 9 October 1825. The party sailed from Stavanger, Norway, on 4 or 5 July in the *Restoration* a sloop of 38.48 tons, and consisted of 46 passengers (including an infant born at sea) and a crew of seven. The documents, some of which are reproduced in facsimile, are in the original Norwegian and in English and deal with the libel of the sloop by the United States authorities for exceeding the statutory limitation of two passengers for each five tons of a vessel landing at an American port.

DIDIO IRATIM ALFONSO DA COSTA [ED.], *Subsídios para a História Marítima do Brasil.* (Rio de Janeiro: Imprensa Naval, 1938 [Vol. I], 1939 [Vol. II]). Folio, paper bound. 398 pages (Vol. I), 506 pages (Vol. II).

By a Presidential decree of 23 December 1937 the Ministério da Marinha was ordered to create a division of maritime history of Brazil. These two volumes, as the first publications of the division, reflect a wide field of interest, for they contain much valuable material in the form of articles, tabulations or in some cases original documents on diverse aspects of Brazilian maritime history from colonial times to the present, dealing with discovery, navigation, commerce, naval affairs, personalities and many other related topics. The text is in Portuguese.

JOHN A. CORWIN, *A Study of the Customs Service and its History.* Manuscript, letter size, 169 pages.

This manuscript, a photostatic copy of which has been recently made available for consultation in the Library of The National Archives, Washington, D. C., was prepared in 1916 as a report by John A. Corwin, Customs Agent. It deals with tariff legislation in the eighteenth and nineteenth centuries.

*Fifty Years of Shipbuilding* (Newport News, Newport News Shipbuilding and Dry Dock Co., 1940). Large folio, paper covers. 28 pages unnumbered.

Illustrated pamphlet covering fifty years' shipbuilding activities with many illustrations of modern and older ships, construction, and portraits.

# *Correspondence*

*To the Editor of* THE AMERICAN NEPTUNE

Sir:

THE AMERICAN NEPTUNE, now being properly launched and having met with an instant and well-deserved success, the time may be opportune to offer a suggestion even though the subject matter obviously has had the attention of the editors.

Perhaps it would be in order to state that two reasons primarily prompted this letter: the statement of policy and purpose made in the first issue of the NEPTUNE, more particularly as repeated in the second, and also the apparent and regrettable lack of information which exists regarding American marine museums and private collections. Not only is there no comprehensive source of information as to what these museums and collections embrace and the principles and aims which guide them, but there exists in fact very little information as far as the public is concerned which would make the cooperation of those interested easily available.

It seems, therefore, desirable to bring about a situation enabling all those actively or potentially interested to apply their knowledge and talents in a way to truly assist those responsible for our collections. Furthermore, it is entirely to be expected that the greater the contribution from amateurs and the wider the circle of informed friends the greater will also be the public interest in established collections – a matter which might well be of more than theoretical importance as far as the future maintenance and development of these institutions are concerned.

Mr. Frank A. Taylor's extremely interesting and illuminating article in the first issue of the NEPTUNE on the American Merchant Marine Survey is, therefore, particularly welcome and should, if possible, be followed by a series of articles to cover the collections now at the National Museum, the Naval Academy, the Mariners' Museum, the Mystic Marine Museum, the Whaling Museum at New Bedford, the M.I.T. Collection, the Peabody Museum of Salem, the Penobscot Marine Museum, the de Young Collection in San Francisco, and many others. I believe that in this way the work and purpose of the men responsible for these collections would become known, that better planning and more fruitful research would result and that much collecting to cross purposes, which now goes on, might be avoided.

I have heard it expressed, and thoroughly agree, that local museums, which properly fill the great need for local research and local collections, might well, with splendid results, develop specialities of more general application, just as Mr. Carl C. Cutler in Mystic is forming an unprecedented collection of builders half models or as the Peabody Museum under its able leadership is bringing together a gallery of ship portraits and photographs that does not exist anywhere else. Likewise, an all-embracing museum such as the one at Newport News is very properly devoting, alongside of its other activities, special attention to Chesapeake Bay craft.

To make known these institutions through your pages and to have those responsible for them define their aims and purposes would prove most stimulating and in-

spiring. Not only would individual collections benefit directly as such but it would bring about a better coordination of effort among all those active in this field. Incidentally, it would also make clear to well meaning but uninformed donors that a museum is more than a curio shop.

Before closing I think it pertinent to mention smaller private collections and collectors. While their treasures in most cases would hardly warrant special write ups, I believe that the NEPTUNE, in addition to its original questionnaire, should methodically encourage such collectors to place on file with your magazine the fullest possible information regarding their interest and activities and material available through them.

Thus, THE AMERICAN NEPTUNE would indeed become a useful and well qualified communication center and depository for information now entirely unavailable, all of which I think is in accordance with the policy and purpose of your very fine publication.

Faithfully yours,

PEHR SPARRE